ACCEPTED TO APJ
Preprint typeset using LaTeX style emulateapj v. 08/13/06

BAYESIAN ANALYSIS TO IDENTIFY NEW STAR CANDIDATES IN NEARBY YOUNG STELLAR KINEMATIC GROUPS

LISON MALO*, RENÉ DOYON, DAVID LAFRENIÈRE, ÉTIENNE ARTIGAU, JONATHAN GAGNÉ, FRÉDÉRIQUE BARON
Département de physique and Observatoire du Mont-Mégantic, Université de Montréal, Montréal, QC H3C 3J7, Canada

AND

ADRIC RIEDEL
Department of Astrophysics, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, USA
Accepted to ApJ

ABSTRACT

We present a new method based on a Bayesian analysis to identify new members of nearby young kinematic groups. The analysis minimally takes into account the position, proper motion, magnitude and color of a star, but other observables can be readily added (e.g. radial velocity, distance). We use this method to find new young low-mass stars in the β Pictoris and AB Doradus moving groups and in the TW Hydrae, Tucana-Horologium, Columba, Carina and Argus associations. Starting from a sample of 758 mid-K to mid-M (K5V-M5V) stars showing youth indicators such as Hα and X-ray emission, our analysis yields 215 new highly probable low-mass members of the kinematic groups analyzed. One is in TW Hydrae, 37 in β Pictoris, 17 in Tucana-Horologium, 20 in Columba, 6 in Carina, 50 in Argus, 33 in AB Doradus, and the remaining 51 candidates are likely young but have an ambiguous membership to more than one association. The false alarm rate for new candidates is estimated to be 5% for β Pictoris and TW Hydrae, 10% for Tucana-Horologium, Columba, Carina and Argus, and 14% for AB Doradus. Our analysis confirms the membership of 58 stars proposed in the literature. Firm membership confirmation of our new candidates will require measurement of their radial velocity (predicted by our analysis), parallax and lithium 6708 Å equivalent width. We have initiated these follow-up observations for a number of candidates and we have identified two stars (2MASSJ01112542+1526214, 2MASSJ05241914-1601153) as very strong candidate members of the β Pictoris moving group and one strong candidate member (2MASSJ05332558-5117131) of the Tucana-Horologium association; these three stars have radial velocity measurements confirming their membership and lithium detections consistent with young age. Finally, we proposed that six stars should be considered as new *bona fide* members of βPMG and ABDMG, one of which being first identified in this work, the others being known candidates from the literature.

Subject headings: Galaxy: solar neighborhood — Methods: statistical — Stars: distances, kinematics, low-mass, moving groups, pre-main sequence — Techniques: radial velocities, spectroscopic

1. INTRODUCTION

Nearby young co-moving groups are sparse, gravitationally unbound stellar associations comprising a few dozens of stars scattered within ~ 100 pc of the Sun with ages ranging from 5 to a few hundred Myr. Co-moving group members are characterized by a common position and space motion within the Galaxy. As a result of a projection effect, they display an organized motion on the sky moving towards a convergent point (apex; Montes et al. 2001) and this can be used to discriminate genuine members from field stars. To identify new associations and/or new members of a given association, Eggen (1958, 1995) used the convergent point criterion, which is based on the direction of motion of group members on the celestial sphere, together with new criteria based on the amplitude of the stars' motion. The latter are known as Eggen's criteria. Eggen's method was slightly modified by Montes et al. (2001) to take into account the 3D space motion dispersion of the stars. They used proper motion, radial velocity and distance uncertainties to measure the galactic space velocities and their dispersion among the members of an association. Generally, proper motion, radial velocity and distances constitute minimal information needed for identifying young stars from co-moving groups.

In the last decade, several new associations have been identified, thanks mostly to Hipparcos (Perryman et al. 1997) and other large scale surveys like TYCHO (Høg et al. 2000) and 2MASS (Skrutskie et al. 2006). Zuckerman et al. (2001a) improved the method to confirm candidate membership to young associations by including constraints on their photometric properties. Following the advent of the 2MASS PSC catalog (Cutri et al. 2003), Song et al. (2003) used an optical-infrared color-magnitude diagram to better discriminate between K and M dwarfs. The Hipparcos catalog made it possible to determine space velocities with good precision for approximately 20% of nearby young star candidates. For the remaining 80%, Song et al. (2004) used the "good box" method for finding other candidate young stars with photometric and kinematics properties similar to the known members. Similarly, Torres et al. (2006, 2008) led the development of a merit function for identifying new members (Search for Associations Containing Young stars; SACY).

Although significant progress has been made in the last decade in finding young stars in co-moving groups, their identification remains challenging because they are sparsely dispersed over the celestial sphere. Moreover, the studies men-

*Based on observations obtained at the Canada-France-Hawaii Telescope (CFHT) which is operated by the National Research Council of Canada, the Institut National des Sciences de l"Univers of the Centre National de la Recherche Scientique of France, and the University of Hawaii.

Electronic address: malo@astro.umontreal.ca, doyon@astro.umontreal.ca, david@astro.umontreal.ca, artigau@astro.umontreal.ca, gagne@astro.umontreal.ca, baron@astro.umontreal.ca and riedel@phy-astr.gsu.edu

TABLE 1
PROPERTIES OF YOUNG LOCAL ASSOCIATIONS

Name of group	Age range (Myr)	Distance range (pc)	Number of stars[a]
β Pictoris (βPMG)	12-22	9-73	39
TW Hydrae (TWA)	8-20	28-92	10
Tucana-Horologium (THA)	10-40	36-71	44
Columba (COL)	10-40	35-81	21
Carina (CAR)	10-40	46-88	5
Argus (ARG)	30-50	8-68	11
AB Doradus (ABDMG)	50-120	7-77	47

[a]Members with published trigonometric distance only.

tioned above have uncovered relatively few low-mass (K and M) stars in nearby young associations since they relied mostly on surveys in the V band with a limiting magnitude around V=14. However, some recent studies are now providing a substantial number of candidates in the low-mass regime (Torres et al. 2006, 2008; Lépine & Simon 2009; Schlieder et al. 2010; Shkolnik et al. 2011; Desidera et al. 2011; Kiss et al. 2011; Rodriguez et al. 2011; Riedel et al. 2011; Schlieder et al. 2012a; Shkolnik et al. 2012).

In this paper, we present a new method for identifying young low-mass stars in kinematic groups. More specifically, the method allows calculating an objective membership probability of a given candidate to an ensemble of moving groups. This method is applied to the seven youngest kinematic groups closest to the Sun. The paper is structured as follows. A brief description of the young associations analyzed is presented in §2 and more details on the kinematic properties, space location and photometric properties of the known members of these associations are presented in §3. A presentation of the kinematic model describing these associations follows in §4. The Bayesian method used for selecting new members is described in §5. Then the sample to which our method is applied is described in §6, followed by the results is §7. Follow-up observations (radial velocity and lithium absorption) for some candidates are presented and discussed in §8. Section §9 is devoted to a discussion of previously known members and new candidate members unveiled from this work. Concluding remarks and suggestions for future work follow in §10.

2. THE YOUNG ASSOCIATIONS

Our search for young low-mass stars will be restricted to the seven closest co-moving groups: the β Pictoris Moving Group (βPMG), the TW Hydrae Association (TWA), the Tucana-Horologium Association (THA), the Columba Association (COL), the Carina Association (CAR), the Argus Association (ARG) and the AB Doradus Moving Group (ABDMG). The basic properties of these associations, which are detailed below, are summarized in Tables 1 and 2. Thereafter in this paper, we consider as *bona fide members* of young kinematic groups all stars with a good measurement of trigonometric distance, proper motion, Galactic space velocity and other youth indicators such as Hα emission, X-ray emission, appropriate location in the HR diagram and lithium absorption; those 177 stars are listed in Table 3.

2.1. *β Pictoris moving group*

This group was proposed by Zuckerman et al. (2001a) following the work of Barrado y Navascués et al. (1999). Members sharing the galactic motion of its namesake star were selected from the Hipparcos (Perryman et al. 1997) and Gliese & Jahreiss (1991) databases. The age of this association is estimated from color-magnitude diagrams (20 ± 10 Myr; Barrado y Navascués et al. 1999), stellar formation models (22 ± 12 Myr; Makarov 2007) and Li abundance (12 ± 8 Myr; Zuckerman et al. 2001a). Fernández et al. (2008) summarize the estimated ages published in the literature (see their Table 2). At present, the βPMG counts 39 *bona fide members* (Zuckerman & Song 2004; Teixeira et al. 2009; Rice et al. 2010; Schlieder et al. 2010; Kiss et al. 2011; Faherty et al. 2012; Schlieder et al. 2012a) ranging from 9 to 73 pc. Rice et al. (2010) have identified the lowest mass, isolated, member of βPMG: an M8.5V brown dwarf. Faherty et al. (2012) have measured the trigonometric distance of this object and this mesurement confirms its membership to this group. The members are scattered over the celestial sphere with a majority of them in the Southern hemisphere. The observational properties of all *bona fide members* are listed in Table 3.

Torres et al. (2006) and Torres et al. (2008) identified respectively 9 and 6 new candidate members of this association from the minimization of a merit function described by space velocities, galactic positions and theoretical isochrones (M_V vs $V-I$). Lépine & Simon (2009) and Schlieder et al. (2010) each introduced 4 new candidate members, selected from the LSPM (Lepine & Shara 2005) and TYCHO-2 catalogs according to kinematic and optical/IR photometric criteria. Kiss et al. (2011) proposed 5 new candidate members using the RAVE (Steinmetz et al. 2006; Zwitter et al. 2008) and Hipparcos catalogs. Nakajima et al. (2010) and Nakajima & Morino (2012) revisited the Hipparcos catalog with a new method to identify members to stellar kinematic groups within 20 pc and 30 pc of the Sun, respectively; they proposed 5 candidates of βPMG within 30 pc. Recently, Schlieder et al. (2012a) identified 2 likely new members with a constistent Hipparcos distance.

2.2. *TW Hydrae association*

TWA was the first nearby association discovered, in the studies of de la Reza et al. (1989) and Gregorio-Hetem et al. (1992) following the work of Rucinski & Krautter (1983) on TW Hya. These studies used the IRAS (Helou & Walker 1988) point-source catalog to identify four other T Tauri systems in the same region of the sky (Webb et al. 1999). Kastner et al. (1997) concluded that TWA forms a physical association with five strong X-ray emitters. Webb et al. (1999) associated six more stellar systems (7 stars and 1 brown dwarf) to TWA using the X-ray properties of all stars within 12° around TW Hya. TWA now counts around 30 potential members (Mamajek 2005) including 10 *bona fide members* (see Table 3). Recently, Nakajima & Morino (2012) proposed 7 candidates within 30 pc.

The age of TWA is estimated from HR diagram along with pre-main sequence tracks (8 Myr; Webb et al. 1999), HR diagram with Hα and lithium equivalent width (10^{+10}_{-7} Myr; Barrado Y Navascués 2006) and the expansion age (20^{+25}_{-7} Myr; Mamajek 2005). Using galactic dynamics, de la Reza et al. (2006) determined an age of 8 ± 0.8 Myr. Mamajek et al. (2000) and recently Song et al. (2012) suggested that TWA is likely the near edge of a larger population (i.e., Lower Centaurus Crux).

2.3. *The Great Austral Young Association (GAYA)*

Torres et al. (2003, 2006) identified many young stars with similar kinematic and photometric properties. This group of

stars was proposed to be called the Great Austral Young Association (GAYA) and was later sub-divided into three groups: THA, COL and CAR (Torres et al. 2008).

2.3.1. *Tucana-Horologium association*

Discovered simultaneously, the Tucana association (Zuckerman & Webb 2000) and the Horologium association (Torres et al. 2000) were combined together because of their similar space motion, age and distance (de La Reza et al. 2001). In the first case, Zuckerman & Webb (2000) used the Hipparcos and the IRAS catalogs to find 10 stars having a similar galactic motion in both catalogs. The Horologium association was identified by Torres et al. (2000) using the ROSAT (Voges 1994) catalog in order to find X-ray emitting sources around the active star EP Eri.

The following work of Song et al. (2003) discovered 11 new members with a galactic motion similar to those discovered in previous studies. THA counts 44 *bona fide members* (Zuckerman & Song 2004; Torres et al. 2008; Kiss et al. 2011; Zuckerman et al. 2011) ranging from 36 to 71 pc (see Table 3). More recently, Torres et al. (2008) and Kiss et al. (2011) respectively identified 9 and 2 new candidate members. Zuckerman et al. (2011) proposed 8 new members to THA with spectral types between A1V and G8V. Nakajima & Morino (2012) proposed 4 more candidates within 30 pc.

The age of THA is estimated at 40 Myr (Zuckerman & Webb 2000) based on various age indicators including Li equivalent width, Hα profile and gyrochronology. The kinematic evolution of the association with time provides further constraints on its age. Assuming a coeval formation with an initial velocity dispersion of 1.5 km s^{-1}, the group of stars should have dispersed over 70 pc after a period of 20 Myr (Torres et al. 2001). From the studies of Stelzer & Neuhäuser (2000) and Zuckerman et al. (2001b), they estimate the lower age limit at 10 Myr.

2.3.2. *Columba association*

COL includes 53 proposed members by Torres et al. (2008); Zuckerman et al. (2011), with 21 listed as *bona fide members* (see Table 3). Three stars proposed by Torres et al. (2008) to be members of COL were already proposed by Zuckerman & Song (2004) to be members of THA. Recently, Zuckerman et al. (2011) added 14 new members (B9V to M0.5V) including multiple planet host star HR 8799 (Marois et al. 2008) whose membership was also confirmed by Doyon et al. (2010) through a Bayesian analysis similar to the one presented in this paper. The age of COL is estimated to be similar to that of THA (Torres et al. 2008).

2.3.3. *Carina association*

This association was discovered by the same method as THA and COL (Torres et al. 2008). Torres et al. (2008) proposed 23 members, with only five listed as *bona fide members*. (see Table 3). They also showed that the stars in CAR have properties and age similar to THA and COL members. Given the small number of *bona fide members* identified in CAR, this association cannot be considered as well defined as others like βPMG, THA and COL.

2.4. *Argus association*

This association was initialy unveiled by Makarov & Urban (2000) using proper motion to identify a bulk of stars located in the Carina-Vela moving group. The IC 2391 open cluster was proposed to be part of this moving group by Makarov & Urban (2000), and Torres et al. (2003) used the convergence point method to show that the kinematics of these two groups are similar. Torres et al. (2003) identified this group as the Argus Association due to its special galactic space velocity U and proposed a different definition for this group. Riedel et al. (2011) proposed that the closest (8.4 pc) pre-main sequence star should be AP Col, a member of the Argus association. Zuckerman et al. (2011) proposed 6 new members with a spectral type between A0V and F4V. Recently, Desidera et al. (2011) proposed HIP 36948 as a candidate member of Argus association from several age-dating indicators. ARG counts 11 *bona fide members* (see Table 3). This association is not as well defined as other groups because the properties of all known members are not well measured. There is no parallax mesurement for the IC 2391 members.

The age of the ARG members is similar to that of the IC 2391 members as inferred from the lithium equivalent width and position in the HR diagram (40 Myr; Torres et al. 2008). An age of 50$\pm$5 Myr was inferred by Barrado y Navascués et al. (2004) using lithium depletion and Hα emission.

2.5. *AB Doradus moving group*

This group was identified by Zuckerman & Song (2004) by performing a kinematic analysis of the Hipparcos catalog. Forty-seven *bona fide members* are associated with this group (Zuckerman & Song 2004; Torres et al. 2008; Zuckerman et al. 2011) and range in distance from 7 to 77 pc. Several new candidate members have been proposed recently: 43 by Torres et al. (2008), 6 by Schlieder et al. (2010), 6 by Schlieder et al. (2012a) and 1 by Bowler et al. (2012). Nakajima & Morino (2012) proposed 8 (2 F and 6 M stars) more candidates of ABDMG within 30 pc.

In addition to having a common motion, the members show signs of youth, such as strong Hα emission and/or the presence of Li. The observational properties of all members are listed in Table 3.

The age of ABDMG is estimated by various age indicators. An age of $\sim$ 50 Myr is deduced by a color-magnitude diagram (CMD) (M_V vs $V-K$; see figure 1 of Zuckerman et al. 2004). Luhman et al. (2005) compared the same diagram for ABDMG and the open cluster IC 2391 (30-50 Myr) to deduce an age between 75 and 150 Myr. Using Li equivalent widths and the CMD M_V vs $V-I$, López-Santiago et al. (2006) estimated different ages for two subgroups of ABDMG: 30-50 Myr and 80-120 Myr. Recently, ages of 45 Myr (lower limit) and 70 Myr were estimated from Li equivalent widths by Mentuch et al. (2008) and da Silva et al. (2009), respectively.

3. GLOBAL PROPERTIES OF KNOWN MEMBERS AND FIELD STARS

This section summarizes the main kinematic and photometric properties for the known members of the seven associations studied here. As the Bayesian analysis performed later requires considering also that a star belongs to the field, as an hypothesis, the properties of field stars are also discussed. These properties will be used in the next section for constructing kinematic and photometric models for each association. For simplicity, we model these properties using simple functions: the Galactic space velocities and positions distributions are modeled by Gaussians whose parameters are inferred by fitting cumulative distribution functions while the color magnitude sequences are modeled with polynomials.

TABLE 2
MEAN GALACTIC MOTION AND POSITION

Name of group	UVW (km s^{-1})	σ_{UVW} (km s^{-1})	XYZ (pc)	σ_{XYZ} (pc)
β Pictoris (βPMG)	−10.94, −16.25, −9.27	2.06, 1.30, 1.54	9.27, −5.96, −13.59	31.71, 15.19, 8.22
Tucana-Horologium (THA)	−9.88, −20.70, −0.90	1.51, 1.87, 1.31	11.39, −21.21, −35.40	19.29, 9.17, 5.39
AB Doradus (ABDMG)	−7.12, −27.31, −13.81	1.39, 1.31, 2.16	−2.37, 1.48, −15.62	20.03, 18.83, 16.59
Columba (COL)	−12.24, −21.32, −5.58	1.03, 1.18, 0.89	−27.44, −31.32, −27.97	13.79, 20.55, 15.09
Carina (CAR)	−10.50, −22.36, −5.84	0.99, 0.55, 0.14	15.55, −58.53, −22.95	5.66, 16.69, 2.74
TW Hydrae (TWA)	−9.87, −18.06, −4.52	4.15, 1.44, 2.80	12.49, −42.28, 21.55	7.08, 7.33, 4.20
Argus (ARG)	−21.78, −12.08, −4.52	1.32, 1.97, 0.50	14.60, −24.67, −6.72	18.60, 19.06, 11.43
Field stars	−10.92, −13.35, −6.79	23.22, 13.44, 8.97	−0.18, 2.10, 3.27	53.29, 51.29, 50.70

3.1. *Kinematic properties*

Because of the coeval formation of a given association, all members share, to within a few km s^{-1}, a common space velocity within the Galaxy. The galactic space motion of a star, UVW, is determined from its sky position (α, δ), radial velocity, proper motion and parallax, using the Johnson & Soderblom (1987) relations. Proper motion and parallax measurements come from several sources (van Leeuwen 2007; Gizis et al. 2007; Teixeira et al. 2008, 2009; Riedel et al. 2011; Faherty et al. 2012, ; Riedel in prep.), while radial velocities are taken from various studies (see Table 3). The field star sample we used comprises 10094 stars within 150 pc with Hipparcos parallax known to an accuracy better than 5σ (from van Leeuwen 2007) and radial velocities from Francis & Anderson (2009). Figure 1 shows the U cumulative distribution function for the seven associations and for the field stars sample, as an example. These distributions are reasonably well approximated by normal functions whose parameters are given in Table 2.

3.2. *Galactic position*

By virtue of their youth and their coeval formation, the members of young associations have had little time to disperse within the Galaxy. As a result, the positions XYZ of the members of a young association are relatively well confined within the Galaxy. The XYZ frame of reference is centered on the position of the Sun and follows the same sign convention as the galactic velocities UVW, i.e. X positive towards the center of the Galaxy, Y positive in the direction of galactic rotation and Z positive towards the north galactic pole. Table 2 gives the mean values and dispersions for the XYZ distribution of the young kinematic group members and field stars. The X cumulative distributions of the known members of the seven associations and the field stars are presented in figure 2.

3.3. *Photometric properties*

CMDs have been a crucial tool for identifying young stars. Since our goal is to search for low-mass stars, color indices as red as possible are desirable and we opted for the $I_c - J$ index. A color index based on V-band magnitudes, largely used in previous studies to search for young stars, is impractical for many objects later than M5V.

For the *bona fide members* and the field stars, the I_c magnitudes come from Hipparcos (Anderson & Francis 2012), DENIS (Epchtein et al. 1997), SDSS-DR8 (Adelman-McCarthy & et al. 2011) and other studies. We transformed the Gunn-i DENIS and SDSS magnitudes to I_c using conversions derived using the standards of Landolt (Landolt 2009). These transformations are

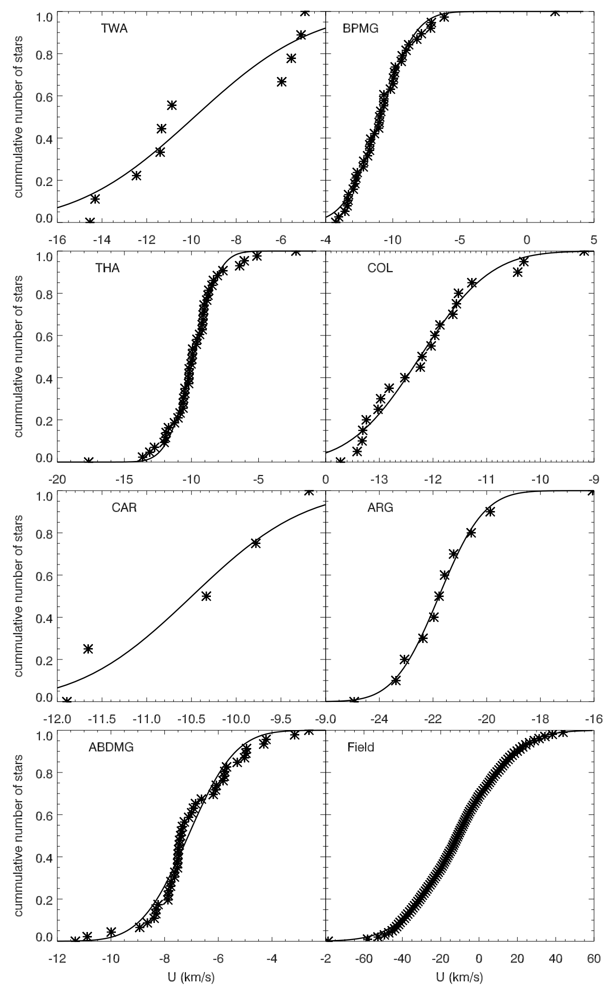

FIG. 1.— U cumulative distribution functions of *bona fide members* of young kinematic groups and the field stars. The black line represents the adopted parametrization (see Table 2).

$$I_c = i_{DENIS} + 0.01 \quad (1)$$

$$I_c = i_{SDSS-DR8} - 0.67. \quad (2)$$

and accurate within 0.2 mag over -0.10 < $I_c - J$ < 3.25.

The J magnitude is taken from the 2MASS PSC (Cutri et al. 2003). Field stars are taken from the samples of Francis & Anderson (2009) and Phan-Bao et al. (2003). The first includes 10094 stars within 150 pc with radial velocity and trigonometric distance measurements. The second includes 64 M dwarfs with parallax measurements from various stud-

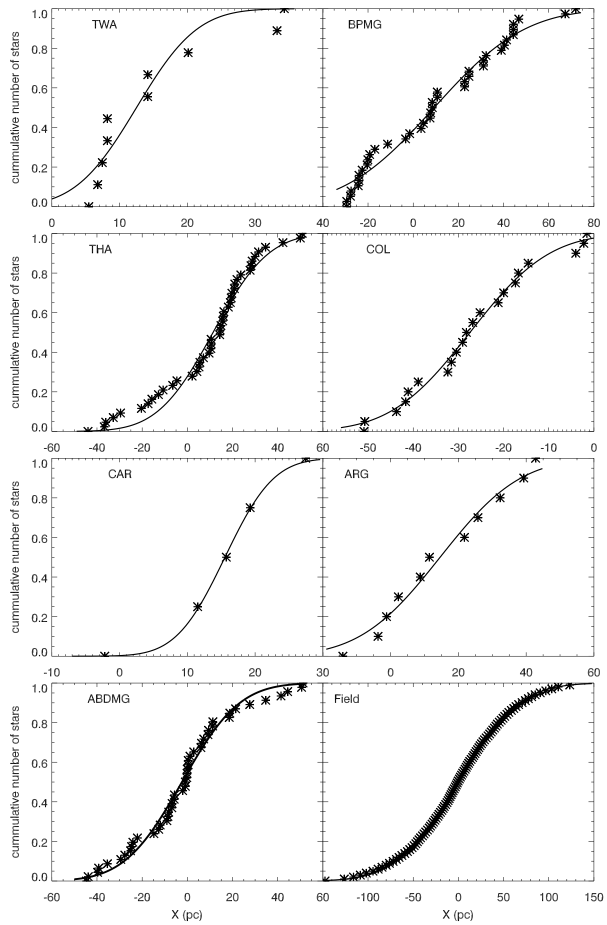

FIG. 2.— X cumulative distribution functions of the known members of young kinematic groups and the field stars. The black line represents the adopted parametrization (see Table 2).

ies.

The least massive known members of the seven young groups studied are M8.5V (βPMG and TWA) and M3V (ABDMG) dwarfs. Thus, to extend the color sequence of the young associations beyond M3V up to M9V, we used the evolutionary models of Baraffe et al. (1998, 2002), shifting the isochrones (typically by 0.5 mag) to match the known members between K5V and M5V dwarfs.

For the purpose of the current analysis, the association members are merged into four groups: <10 Myr-old (TWA), 10 Myr to 20 Myr-old (βPMG), 20 Myr to 50 Myr-old (THA, COL, CAR and ARG) and >50 Myr-old (ABDMG). Since ABDMG lacks massive (A0V dwarf) known members, a sample of 33 early-type Pleiades members (with Hipparcos parallax) were used to reproduce the trend of the color sequence from A0V to M9V for the ABDMG.

We used the 8 Myr model for TWA, 12 Myr for βPMG and 40 Myr for the THA, COL, CAR and ARG groups. The oldest groups (including ABDMG and Pleiades members) were approximated as a 80 Myr model. For the field star sample, we used the 5 Gyr model. We corrected the magnitudes of the models to match the 2MASS color system. All known binaries were excluded for the determination of the color sequences. Figure 3 shows the resulting CMD sequences adopted, for the association members and old field stars. For $I_c - J > 0.8$, young stars are significantly overluminous compared to field stars. The absolute magnitude M_J of those four groups are well described, within a dispersion of 0.3 mag, using polynomials. Similarly, one can construct an empirical sequence for old field stars. This sequence is represented by the dashed line in Figure 3. The 1σ dispersion, represented by the grey envelope, varies with color and is typically ∼0.5 mag.

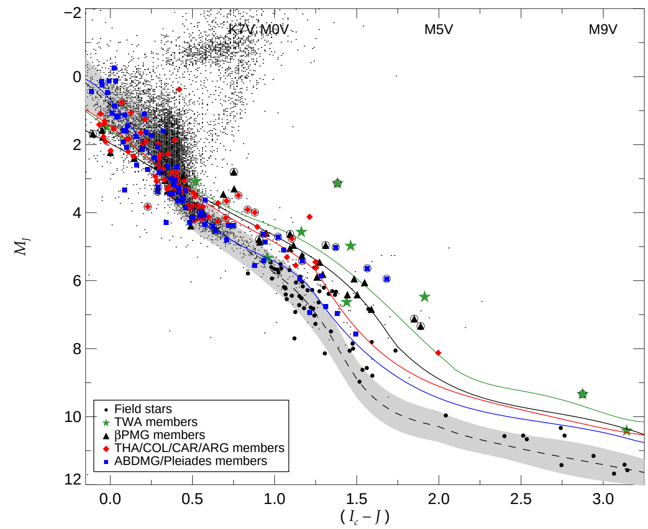

FIG. 3.— Color-magnitude diagram (M_J vs $I_c - J$) for members of TWA (green stars), βPMG (black triangles), THA, COL, CAR and ARG (red diamonds) and ABDMG and Pleiades (blue squares). Fields stars (dots and filled black circles) are from Francis & Anderson (2009) and Phan-Bao et al. (2003). The dashed line and shaded area represent the locus of old field stars. K5V-M5V, representative of our search sample (see §6), have $0.8 < I_c - J < 2.0$. On average, young late-type stars are brighter than field stars, a property that can be used, along with other kinematic properties, to discriminate young stars from old ones. Binary stars are those with black circles superposed on their own symbol.

4. KINEMATIC MODEL

A key element of our analysis for identifing new members of young associations is to build a kinematic model of a given association. For a star at a given position on the sky and given the mean and dispersion of the galactic space velocity of an association, this model should reliably predict the radial and tangential velocities and the direction of proper motion that the star would have if it were an actual member of the association. For a given distance, the tangential velocity translates into a proper motion amplitude. The direction and amplitude of the proper motion predicted by this model restrict considerably the number of potential members of a young association, and even help constraining their distance.

The kinematic model is built by inverting the procedure described in Section 3. For a specific group and a position in the sky (right ascension and declination), we create virtual stars having UVW velocities and dispersions as given by Table 2. The radial and tangential velocities of these stars are calculated and their mean and dispersion are obtained. Then given a distance, the tangential velocity is used to estimate the amplitude of the proper motion.

The robustness of this kinematic model can be gauged by comparing the measured and predicted radial velocities for *bona fide members*. This comparison is presented in figure 4 for the seven associations. There is an excellent correlation between the predicted and observed values, with an rms of 1.9 km s^{-1}.

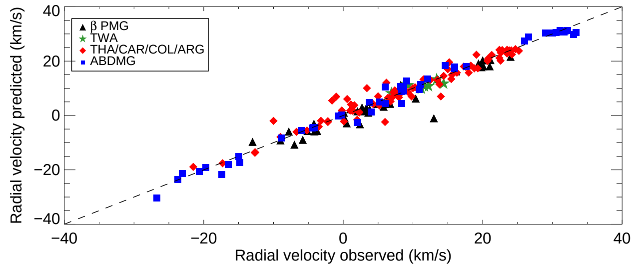

FIG. 4.— Comparison between estimated radial velocities by the kinematic model and those observed for the known members of βPMG (black triangles), TWA (green stars), THA,COL,CAR,ARG (red asterisks) and ABDMG (blue diamonds).

5. SELECTION OF CANDIDATES - BAYESIAN STATISTICAL ANALYSIS

5.1. *General formalism*

Based on a set $\{\theta\}$ of observables, a Bayesian analysis is used to select stars potentially members of a young kinematic group. From this analysis, a membership probability and a statistical distance are determined for each star and each group considered. In this study, the observables are the amplitude of proper motion in right ascension and declination, the apparent I_c and J magnitudes and the position (α, δ) of the star on the sky. It is possible to add more observables in the analysis (e.g, radial velocity), but in practice they are limited. Let $\{H_k\}$ be a set of hypotheses $H_{d_n}^{g_m}$

$$\{H_k\} = \{(H_{d_1}^{g_1}),(H_{d_2}^{g_1}),\ldots,(H_{d_n}^{g_1}),(H_{d_1}^{g_2}),(H_{d_2}^{g_2}),\ldots,(H_{d_n}^{g_m})\} \quad (3)$$

that a candidate is a member of a group (g_m) at a given distance d_n. The set contains $m \times n$ hypotheses where m represents the number of groups considered and n the number of distances. Given the observable θ, the probability that a candidate star is a member of group g_i at distance d_j is $P(H_{d_j}^{g_i}|\theta)$. In what follows, the symbol "|" means "given".

According to Bayes' theorem, we have:

$$P(H_{d_j}^{g_i}|\theta) = \frac{P(\theta|H_{d_j}^{g_i})P(H_{d_j}^{g_i})}{P(\theta)} \quad (4)$$

with,

$$P(\theta) = \sum_{k=1}^{m\times n} P(\theta|H_k)P(H_k)$$

where $P(\theta|H_k)$ is the probability to obtain the observable θ under a given hypothesis. This quantity can be easily determined with a model representative of the observable θ. In the denominator of Equation (4), $P(\theta)$ is the marginal probability to obtain the observable θ independently of the hypothesis considered. This term normalizes the numerator by summing over all possibilities. $P(H_k)$ is the prior probability that the hypothesis is true. Since these prior probabilities are unknown, an equal weight is given to them: $P(H_k) = (1/m \times n)$.

Eq. (4) is a probability density function whose maximum gives the most likely hypothesis and the most likely distance (hereafter referred to as the *statistical* distance), while its sum over all distances (for each group hypothesis) gives the membership probability irrespective of the distance :

$$P(H^{g_i}|\theta) = \sum_{j=1}^{n} P(H_{d_j}^{g_i}|\theta). \quad (5)$$

As mentioned before, the probabilities $P(\theta|H_k)$ needed in Eq. (4) are derived from a Gaussian distribution with mean $\bar{\theta}$ and standard deviation σ:

$$P(\theta|H) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{1}{2}\left(\frac{(\theta-\bar{\theta})}{\sigma}\right)^2} \quad (6)$$

By considering two observables and applying Baye's theorem iteratively, equation (4) becomes:

$$P(H_{d_j}^{g_i}|\theta_1 \cap \theta_2) = \frac{P(\theta_1|H_{d_j}^{g_i})P(\theta_2|H_{d_j}^{g_i})P(H_{d_j}^{g_i})}{\sum_{k=1}^{m\times n} P(\theta_1|H_k)P(\theta_2|H_k)P(H_k)}, \quad (7)$$

The generalization of this expression for f observables is:

$$P(H_{d_j}^{g_i}|\theta_1 \cap \theta_2 \cap \ldots \cap \theta_f) = \frac{P(H_{d_j}^{g_i})\prod_{l=1}^{f} P(\theta_l|H_{d_j}^{g_i})}{\sum_{k=1}^{m\times n} P(H_k)\prod_{l=1}^{f} P(\theta_l|H_k)} \quad (8)$$

5.2. *Practical application of the formalism*

Now consider the application of this formalism to the specific observables of our problem, starting with the apparent J magnitude. Given an association and a distance, the expected absolute J magnitude ($\bar{\theta}$) is deduced from the $I_c - J$ color of the candidate and the empirical sequence (M_J vs $I_c - J$) of the association. The parameter σ represents the dispersion in magnitude for a given color index.

Next consider the amplitude of the proper motion as a second observable. For a given association and position of a candidate on the sky, the kinematic model discussed in section 4 predicts the expected mean tangential velocity and its dispersion from the mean and dispersion of UVW of a group (section 4). Given this tangential velocity and the distance considered, the amplitude of the proper motion ($\bar{\theta}$) is calculated along with its dispersion (σ). These quantities are compared to the observed proper motion using Eq. (6). We apply this methodology for the amplitude of the proper motion in both right ascension and in declination.

The last two observables to consider are the right ascension and declination, $\theta = (\alpha, \delta)$. Given the position (α, δ) of a candidate and a distance, the corresponding galactic positions XYZ of the candidate are determined and compared to the mean ($\bar{\theta}$) and dispersion (σ) from the kinematic model.

All the parameters used in the analysis are given in Table 2. In practice, the analysis was carried out for distances ranging from 1 to 200 pc, by increment of 0.5 pc. To handle the impact of biased photometry from possibly unresolved binary stars, we added an extra hypothesis for each group wherein the photometric sequences was shifted by 0.75 mag, thus correcting for equal luminosity binarity. In what follows, the probabilities reported for a given group are the sum of the probabilities for the nominal and shifted photometric sequence hypotheses. Finally, in calculating Eq. 8, we raised the probabilities for the three galactic positions (X,Y,Z) to the power 2/3 to ensure that all observables carry an equal weight. A web-based tool of the Bayesian technique presented here is available at http://www.astro.umontreal.ca/%7emalo/banyan.php. For simplicity, the online version does not include the photometry observables.

To illustrate the robustness of the Bayesian analysis, this method was applied to known members of the young associations considered. Adopting a membership probability threshold of 90%, 72% of the *bona fide members* are recovered (see Table 4).

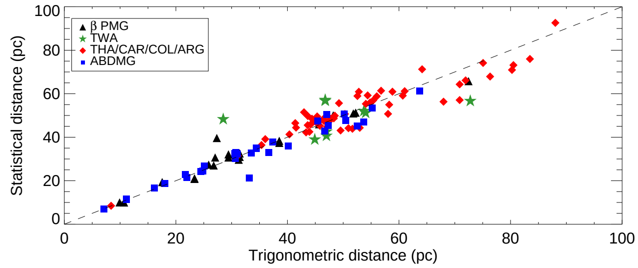

FIG. 5.— Comparison between the statistical distance from Bayesian analysis and the trigonometric distance for the known members of young associations.

Figure 5 presents a comparison between the observed trigonometric distance (d_p) and the *statistical* distance (d_s) estimated by the Bayesian analysis. The statistical distances agree with the trigonometric distances within 10%.

We applied this method to the sample of field stars from Phan-Bao et al. (2003), and adopting the same membership threshold ($P_{field} > 90\%$), 98% of these stars are found to be member of the field.

It should be stressed that the method above does not make use of the radial velocity as an input observable. Table 4 shows the resulting probabilities when the radial velocity is included in the analysis. In general, as expected, the probability slightly increases with this additional knowledge but this is not always the case; this will be discussed later in section 9.

6. LOW-MASS STAR SEARCH SAMPLE

For our search for new late-type members of young associations, we wanted to start with a sample of low-mass stars showing chromospheric X-ray and Hα emissions, which are both indicator of youth. We used the sample of Riaz et al. (2006), consisting of 1061 spectroscopically confirmed K5V to M5V dwarfs, supplemented with 43 K5V-M5V young star candidates previously identified by Kastner et al. (1997), Webb et al. (1999), Torres et al. (2000), Zuckerman & Song (2004), Torres et al. (2006), Torres et al. (2008), Lépine & Simon (2009), Looper et al. (2010), Schlieder et al. (2010), Kiss et al. (2011), Rodriguez et al. (2011), Schlieder et al. (2012a) and Bowler et al. (2012).

The *I*-band photometric data come from the DENIS and SDSS-DR8 catalogs and several other studies (Torres et al. 2006; Reid & Cruz 2002; Koen et al. 2010; Casagrande et al. 2008; Reid et al. 2003, 2004, Riedel (in prep)).

We have removed stars with I_c magnitude uncertainties larger than 0.2 mag from our search sample. Also photometric observations of 7 stars with uncertain/missing *I*-band measurements were obtained on 2010 August 23-25 (NOAO-2010B-0449) at the CTIO 0.9m telescope using the full ($13.7' \times 13.7'$) Tek 2048 $\times$ 2046 CCD camera with $0.401''$ pixel^{-1}. The observations were made using a Gunn-*i* filter (8200/1500). Photometric calibration was done using observations of fields containing severals stars with known magnitudes and available spectroscopy from SDSS. Since the SDSS-i filter is not exactly the same as the Gunn-*i* filter, synthetic magnitudes were extracted from the spectra of the SDSS stars. One standard field was observed after each target observation. The I_c magnitudes are given in Table 5 (see note e). Finally, the *J*-band data are taken from the 2MASS PSC catalog.

The proper motion data mainly come from the NOMAD (Zacharias et al. 2005), UCAC3 (Zacharias et al. 2009), PPMXL (Roeser et al. 2010) and other catalogs. From the original sample of 1104 stars, we kept 758 stars with proper motion measured at a significance of more than four sigma and a good I_c magnitude measurement. Of these 758 stars, 71 K5V-M5V were previously identified as young stars in the literature.

7. RESULTS

7.1. *Identification of new candidates*

As described in the last section, our initial search sample is subject to the Bayesian analysis using as observables the apparent I_c and J magnitudes, the amplitude of proper motion in right ascension and declination, and the right ascension and declination. We will see later (section 8) how other observables, in particular the radial velocity, can be used to better constrain the membership probability of a candidate. Figure 6 presents, for the entire search sample, the membership probability distribution for three of the seven young associations considered. As expected, the vast majority of stars have very low membership probabilities, but there is a significant population of objects with a probability higher than 90%. We set a threshold at 90% to qualify a candidate as a "high probability member" of a given association (see next section for a discussion of false positives). Overall, our analysis has identified a total of 215 highly probable members including 58 young candidate identified in the literature.

The sample of new candidates (215) from our study includes one star in TWA, 37 in βPMG, 17 in THA, 20 in COL, 6 in CAR, 50 in ARG and 33 in ABDMG. The properties of all candidates are presented in Table 5. We note that 51 of our candidates have an ambiguous membership, i.e., they are probable candidates in more than one association with a combined probability over all young groups above 90%. A radial velocity measurement is needed to remove this ambiguity (see Tables 6, 7).

Figure 7 presents the position on the sky as well as the amplitude and the direction of the proper motion for both *bona fide members* and new highly probable candidate members of βPMG, THA and ABDMG. The overall trend in amplitude and direction of the proper motion for the candidate members agree well with the *bona fide members*. Although the majority of the candidates (164) are located in the Southern hemisphere, 13 candidates are in the Northern hemisphere: 4 in βPMG, 4 in ARG and 5 in ABDMG.

Figure 8 shows the spectral type distribution of the new candidates compared to the em bona fide members of βPMG, THA and ABMDG. All the distributions show a maximum between spectral types M0V and M5V. Excluding ambiguous members, our analysis have unveiled 164 new late type (K5V-M5V) candidates. Compared to the 43 *bona fide* K5V-M5V dwarfs already catalogued in the seven kinematic groups under study here, this new sample of young M dwarfs, if confirmed, would roughly quadruple the known population of late type dwarfs of these associations.

The distance distributions for the *bona fide members* of βPMG, THA and ABMDG are superimposed to those of the candidates in figure 9. Overall, the distance distributions for both *bona fide members* and candidates are very similar. For ABDMG, our analysis finds a tail of a few candidates between 55 and 80 pc. Our analysis also identifies a few candidates that are relatively close ($<$20 pc) to the Sun. In general, candidates found at relatively large distances should be taken with caution as they may well be members of more distant ($>$100 pc) young co-moving groups not considered in our analysis. One

such example is the 8 Myr ϵCha association which could be easily confused with βPMG since both associations have very similar UVW (Torres et al. 2008). This emphasizes the need for a trigonometric parallax as a necessary criterion for confirming the *bona fide* status of a candidate.

The galactic positions XYZ of the candidates are presented in figure 10. The dispersion of the *bona fide members* and the new candidates are very similar, in particular for Y and Z. This is expected since the candidates were chosen to be within the parameters of the *bona fide members*.

7.2. *Quantifying the contamination*

It is expected, that some field stars will have a high membership probability by pure chance. One thus needs to estimate the number of such contaminant in our sample. To quantify the number of false positives, we repeated our analysis 200 times by considering, each time, seven fake young associations with UVW and XYZ distributions similar to, but not overlapping with, those of the seven young associations studied here. The seven fake associations were divided into three representative age groups: group 1 (8-20 Myr; BPMG, TWA), group 2 (20-50 Myr; COL, THA, CAR, ARG) and group 3 (>50 Myr; ABDMG). As before, the candidate membership probability threshold was set to 90%.

These Monte Carlo simulations allow determining the median number of false positives. The results of this procedure are presented in figure 11. The contamination is relatively modest for group 1 and 2 with typically (median) only a few false positives, which is about an order of magnitude less than the real number of candidates. For false associations in the group 1 (8-20 Myr), the number of expected false positives is also smaller than the number of candidates by a factor of 10. The number of contaminants is significantly larger for ABDMG (group 3), as one would expect given that the CMD sequence for the older (>50 Myr) association lies closer to that of field stars compared to younger sequences. Based on this analysis, we can estimate a typical (median) false alarm rate of $\sim$ 5% for group 1, $\sim$ 10% for group 2 and $\sim$ 14% for group 3, suggesting that a large fraction of our candidates are likely to be genuine members.

8. RADIAL VELOCITY AND LITHIUM FOLLOW-UP

As pointed out above, the statistical analysis can be performed with other observables, for example the radial velocity (RV). The previous analysis was performed without prior knowledge of this measurement. It is of course desirable to add this observable to the Bayesian analysis if the information is available.

Furthermore, while the kinematics of these stars indicate membership in these associations, their youth should be confirmed through the measurement of other spectroscopic age indicators such as lithium (Li) absorption at 6707.8 Å , a youth indicator for K-M dwarfs less than 70 Myr (see fig.5; Mentuch et al. 2008). This section presents (ongoing) follow-up observations (RV and Li) of a subset of the highly probable members identified by our analysis.

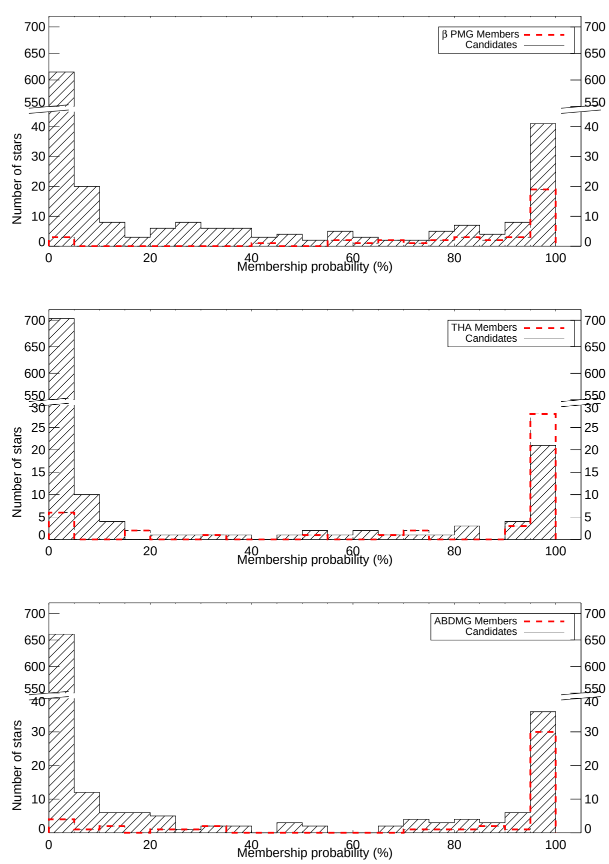

FIG. 6.— Distribution of membership probability for the entire search sample for each young association (black histogram). The *bona fide members* are shown with a red dashed histogram. The vast majority of the 758 stars have probabilities close to 0% as one expects.

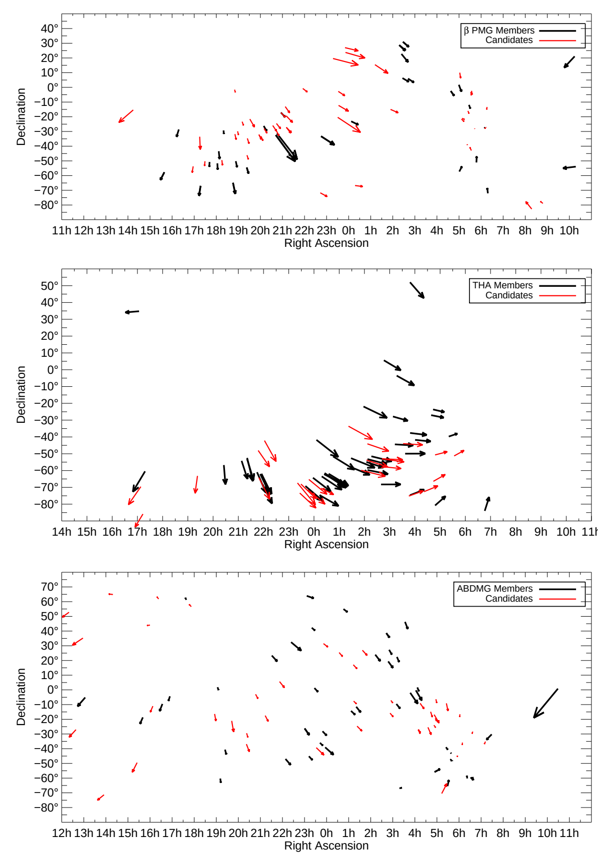

FIG. 7.— Position on the sky and vector of proper motion for the *bona fide members* (bold black arrows) and the new candidates (red arrows) resulting from this study.

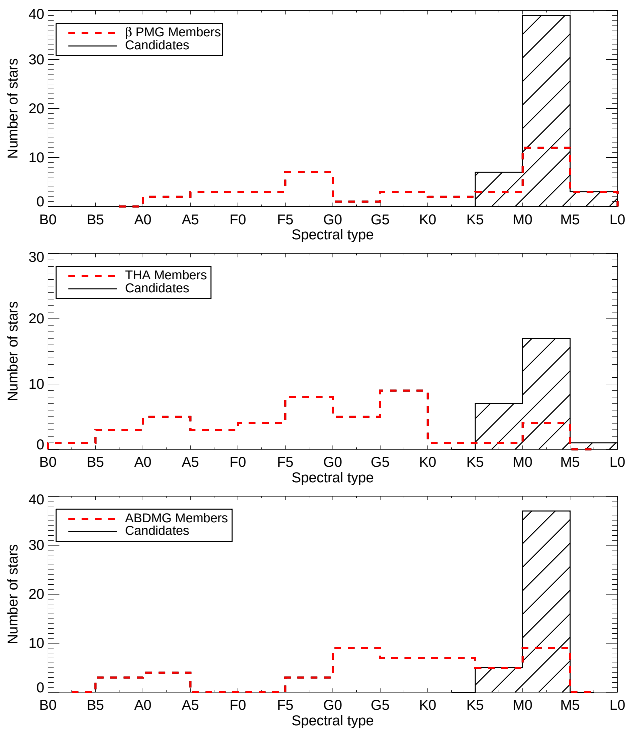

FIG. 8.— Spectral type distribution of previously known members (red dashed lines) and candidates (bold black lines) from this work.

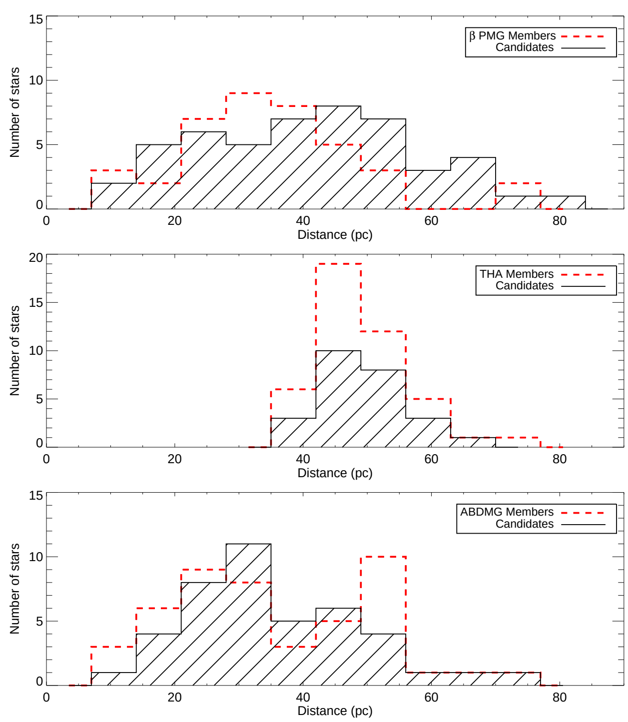

FIG. 9.— Distance distribution for the *bona fide members* (red dashed lines) and for candidates (bold black lines) from this study.

8.1. *Radial velocity follow-up*

We initiated a program to obtain near-infrared high-resolution spectroscopy of some of our highly probable members to measure their radial velocities. The observations were performed using the PHOENIX (Hinkle et al. 2003) spectrograph at the Gemini South telescope (GS-2009A-Q-89, GS-2009B-Q-45, GS-2010A-Q-32, GS-2010B-Q-18, GS-2010B-Q-89). We used a 0.34″-wide slit in combination with the H6420 filter (1.547μm-1.568μm) for a resolving power of R$\sim$ 30000. The instrument setup was inspired by the work of Mazeh et al. (2002) on low-mass binaries. The observations were obtained with a typical ABBA dither pattern along the

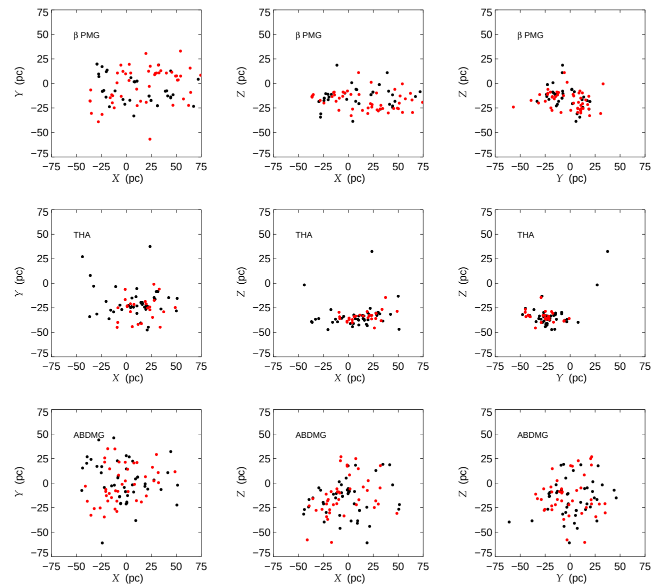

FIG. 10.— Galactic position XYZ of the *bona fide members* (black circles) and new candidates (red circles) from this study.

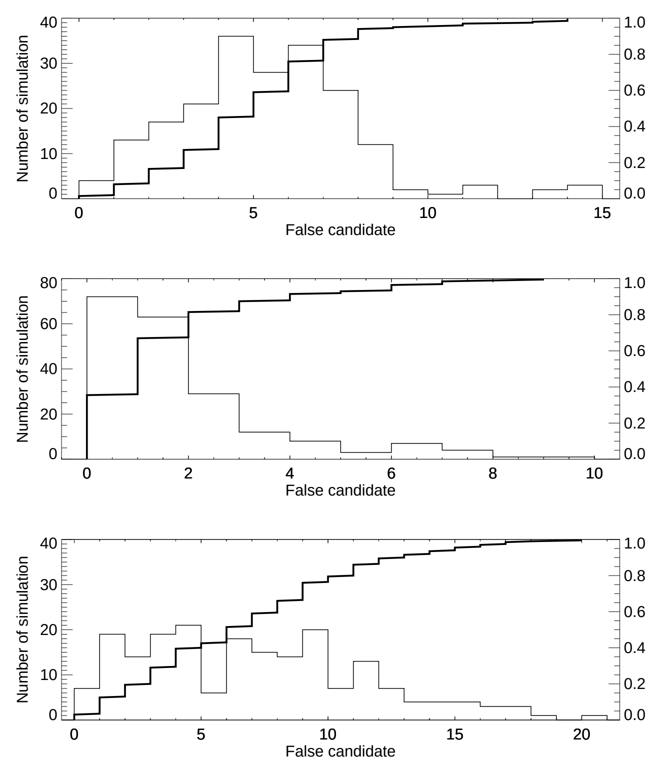

FIG. 11.— Distribution of number of candidates in fake associations (thin line and left axis) for various age groups: 8-20 Myr (top), 20-50 Myr (middle) and >50 Myr (bottom). The thick solid line is the corresponding cumulative distribution (right axis).

slit with individual exposures of 60 to 300 s depending on the target brightness. Flat field and dark images were used to correct for detector cosmetics and OH night-sky emission lines were used for wavelength calibration. A set of radial velocity standards were observed and served as cross-correlation spectra for radial-velocity measurements.

To date, we have obtained RV measurements at one epoch for 101 candidates. The results show that 50% of them are fast rotators which, by itself, is an indication of youth, but makes the measurement of a radial velocity difficult. For 14 of the slow rotators we have obtained a second epoch of RV measurement (to assess spectroscopic binarity); these measurements are presented in Table 5. As discussed in section 9, all 14 slow rotators have radial velocities in good agreement with the expected values for their respective association.

8.2. *Lithium follow-up*

As low-mass stars have a convective outer envelope, the primordial lithium in their photosphere is, with time, transported to the center of the star, where it is quickly destroyed. The presence of lithium in the photosphere of a low-mass star is thus indicative of youth. Lithium absorption at 6707.8 Å is indeed seen for young low-mass members of βPMG, THA and ABDMG. While our candidates are highly probable new members of these young associations, measurements of various age-dating indicators, such as the presence of lithium, is valuable to confirm their membership. We have initiated a program to obtain these measurements for the candidate members with a membership probability $>$90%. High-resolution optical spectroscopy was obtained in queue service observing (QSO) mode with ESPaDOnS (Donati et al. 2006) on CFHT. ESPaDOnS was used in a "star + sky" mode combined with the "slow" CCD readout mode, to get a resolving power of R $\sim$ 68000 covering the 3700 to 10500 Å over 40 grating orders. The data were reduced by the QSO team using the CFHT pipeline called UPENA 1.0. This pipeline uses J-F. Donati's software Libre-ESpRIT (Donati et al. 1997). The total integration time per target is between 30 and 80 minutes. So far 28 candidates have been observed and we have analysed the spectrum for 10 stars, two of which (J0111+1526 and J0524-1601) show clear lithium absorption, confirming their youth. The spectra of these two stars are shown in Figure 12 and further discussed in the next section. The results of the remaining stars with follow-up spectroscopy will be published in a forthcoming paper.

The lithium detection limit is around K7V at an age of ABDMG, M0V for THA and M3V for βPMG (Mentuch et al. 2008). From our 164 candidate members, we expected to detect lithium for 22, 16, 1 stars in βPMG-TWA,THA-COL-CAR-ARG and ABDMG, respectively. For star with a mass lower than the limit detection, we need to find a better age-dating indicator, such as surface gravity.

9. DISCUSSION

In light of the statistical analysis presented above, we discuss the membership of specific stars drawn from three samples: *bona fide members*, new highly probable low-mass star candidates identified for the first time as part of this work, and the other 71 young low-mass star candidates previously identified in the literature (see section 6). For the latter sample, only spectral types later than K5V are considered; the most massive ones will be the subject of a future publication.

We should note that some *bona fide members* show a high

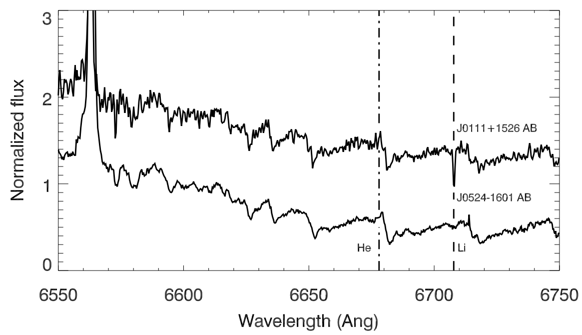

FIG. 12.— High-resolution optical ESPaDOnS spectra of two young binary candidate members showing lithium absorption (unresolved spectra). The Li feature of J0524-1601 is clearly broadened due to relatively fast rotation.

membership probability when considering the binary hypothesis. This hypothesis should be interpreted as an overluminosity compared to other young stars, which could be due to the presence of a binary companion, chromospheric activity, or peculiar colors of the star.

9.1. *Bona fide members*

Since the observational properties of *bona fide members* form the basis of our Bayesian tool, one should expect our analysis to yield a high membership probability for these stars. This is indeed the case. Table 4 gives the membership probablility obtained for these stars for three cases: (1) without considering the RV or parallax information (P), (2) considering the RV but not the parallax (P_v), and (3) considering both the RV and parallax ($P_{v+\pi}$). For all cases, a binary hypothesis is also considered and whenever it yields a higher probability than the single hypothesis, this is noted in Table 4. Assuming that a member is recovered when its probablility is higher than 90%, our analysis correctly recovers 72% (128/177) of all *bona fide members* for case 1. This fraction increases to 88% (155/177) when RV is included (case 2) and to 91% when both RV and parallax informations are used (case 3). This large recovery rate is expected but there remains a few cases (16 out of 177) that have ambiguous or uncertain membership. Those are discussed below.

9.1.1. *βPMG*

HIP 12545 AB : This star is a K6Ve spectroscopic binary (sb1; Torres et al. 2008) that was proposed by Zuckerman & Song (2004) to be a member of βPMG. From our analysis, this star seems to be a member of COL (P_v=99%, $P_{v+\pi}$=88%, P_π=48%). The Galactic positions (XZ) of this star are much similar to COL *bona fide members*. Its measured RV (8.25$\pm$0.05 km s^{-1}) is closer to that predicted for COL (8.6 km s^{-1}) compared to βPMG (11.3 km s^{-1}). However, this difference of 2.7 km s^{-1} is marginal, especially since this star is a fast rotator (vsini=40 km s^{-1}; Torres et al. 2006) as well as a spectroscopic binary; its RV may thus be somewhat uncertain. Our analysis favors a membership in COL due to its position on the CMD which is marginally more consistent (by $\sim$ 0.7 mag) with COL compared to βPMG. However, when the photometry and the RV are excluded, our analysis favors a membership in βPMG (P_π=66%). We should note that this star has an EW_{Li}=433$\pm$23 mÅ (Mentuch et al. 2008) that may be too high to be a member of COL for an age of 20-40 Myr. For this reason, HIP 12545 AB is a *bona fide member* of βPMG.

HIP 11360 : This star (F4IV) was proposed by Moór et al. (2006) to be a member of βPMG. Torres et al. (2008) also proposed this star as a candidate member of βPMG since its kinematic is similar to HIP 12545 AB. Our analysis suggests this star to be in COL (P_v=93% and $P_{v+\pi}$=87%), but as for HIP 12545 AB, there is a difference of only 3.1 km s^{-1} between the predicted radial velocities for βPMG (10.3 km s^{-1}) and COL (7.2 km s^{-1}). A membership in COL is favored since the Galactic position of this star is closer to that of COL compared to βPMG.

HIP 95261 AB: This binary A0V+M7V was originally proposed by Zuckerman & Webb (2000) to be a member of THA, but its membership was revised to βPMG one year later by Zuckerman et al. (2001a). Without RV information, our analysis yields a membership probability (P_π) of 99% in βPMG but it decreases to 0% when RV and parallax information are included ($P_{v+\pi}$). The reason for this drop is its radial velocity (13.0$\pm$2.5 km s^{-1}) that is 15 km s^{-1} off from that predicted for βPMG (-1.0$\pm$2.0 km s^{-1}). Since this star has a low-mass (M7V) companion that could also affect the systemic velocity, the current RV measurement should be taken with caution. Another likely explanation is that the RV may be erroneous since this star is a very fast rotator (vsini = 330 km s^{-1} ; da Silva et al. 2009). To confirm this hypothesis, spectroscopic follow-up of the companion should be sought, in particular to search for low surface gravity indicators which should be significant if the star is a member of βPMG. Also, new RV measurements would be highly desirable to better determine the systemic velocity of the system.

2MASSJ06085283-2753583 : This young brown dwarf (M8.5) was proposed by Rice et al. (2010) to be a member of βPMG which is confirmed by our analysis (P_v=75% and $P_{v+\pi}$=95%). We should note that our analysis is not optimal for this object because its $I_c - J > 3.25$ is beyond the limit of our sequences. If we do not consider the photometry in our analysis, but consider the radial velocity and the trigonometric distance, the membership probability is 93% in βPMG. Since the IR spectrum shows telltale signatures of low-gravity (H-band shape, KI lines), this target should be warranted the status of *bona fide member* of βPMG.

HIP 23418 ABCD : This quadruple system was proposed to be in βPMG by Song et al. (2003) but does not appear in our *bona fide member* list because the uncertainty on its Hipparcos trigonometric distance is larger than our adopted criterion (5σ). Recently, a better parallax was measured by Riedel et al. (in prep) at 40.18$\pm$2.07 mas. This star has a membership probability of P_v=99% to be member of βPMG (see 2MASSJ05015881+0958587; Table 5) and $P_{v+\pi}$=99%. This system should be included in the list of *bona fide members* of βPMG.

HIP 50156: This star (M1V) was proposed by Schlieder et al. (2012a) to be a member of βPMG. From our analysis, this star seems to be a member of COL ($P_{v+\pi}$=93%). However, the radial velocity of this star is somewhat ambiguous: 6.9$\pm$1.0 (Kharchenko et al. 2007), 10$\pm$1 (Montes et al. 2001), 5.8$\pm$0.8 (Gontcharov 2006) and 2.7$\pm$0.1 (López-Santiago et al. 2010) km s^{-1}. It is unclear why the RVs differ so much from these measurements. One possibility is that their radial velocity measurements are skewed by (unknown) binary orbital motion. The predicted radial velocity is 3.2, 8.4 and 1.3 km s^{-1} for membership in βPMG, COL and ABDMG, respectively. Spectroscopy from Shkolnik et al. (2009) and López-Santiago et al. (2010) did not unveil any lithium detection which would point to a relatively old association such as ABDMG. If we do not consider the radial velocity information in our analysis, but still consider the photometry and the trigonometric distance, the membership probability (P_π) is 99% in COL. This star appears young but more RV measurements are desirable to better assess its membership.

9.1.2. *TWA*

TWA 19: This star (G5V) was rejected as a member of TWA and suggested instead to be member of the Scorpius-Centaurus complex by Mamajek (2005) and Torres et al. (2008). Recently, Chen et al. (2011) proposed this star as a member of Lower Centaurus Crux (LCC). While our analysis yields a membership probability in TWA of P=83%, (P_v=94%, $P_{v+\pi}$=75%), it would be interesting to add the Scorpius-Centaurus complex into our analysis but this is beyond the scope of the current paper since we restrict our search to relatively nearby co-moving groups within 100 pc from the Sun.

9.1.3. *THA*

HIP 14551 : This star (A5V) was proposed by Zuckerman et al. (2011) to be a member of THA. From our analysis, this star has an ambiguous status, with a membership probability $P_{v+\pi}$=50% in THA and 49% in COL.

HIP 17782 AB : This binary (G8V*) was proposed by Zuckerman et al. (2011) to be a member of THA. From our analysis, this star seems to be a member of COL ($P_{v+\pi}$=98%). The main reason for the higher probability in COL is the better agreement of its Galactic positions XZ with the members of COL. We propose that HIP 17782 AB be assigned as *bona fide member* of COL.

HIP 2484 AbB: This star was proposed by Zuckerman & Song (2004) to be a member of THA. From our analysis, this star seems to be a member of THA ($P_{v+\pi}$=90%), however the probability without parallax (P_v=48%) is low because there is a 7 km s^{-1} difference between the measured and predicted radial velocities. We should note that HIP 2484 AbB and HIP 2487 AB form a quintuple system. The measured and predicted radial velocities for HIP 2487 AB are almost the same. We thus conclude that the measured radial velocity of HIP 2484 AbB is affected by the binary components and that HIP 2484 AbB is very likely a *bona fide member* of THA.

HIP 105404 AB : This binary (G9V(eb)) was proposed by Zuckerman & Song (2004) to be a member of THA. Our analysis also assigns this star in THA (P=99%) with a higher probability to be a binary, which is indeed the case. However, the membership (P_v) decreases to 0% when the RV is included. The reason is that measured RV is incompatible with the association, differing by 8 km s^{-1} from the predicted value. However, the companion of this star could have an impact on the measured radial velocity. If we do not consider the radial velocity information in our analysis, but still consider the photometry and the trigonometric distance, the membership probability is 99% in THA. Mentuch et al. (2008) measured an EW_{Li}=171$\pm$22 mÅ suggestive of youth. This star is also known to have a circumstellar disk detected at 24 μm (Zuckerman et al. 2011). More radial velocity monitoring of this star is needed to better assess its membership.

HIP 3556, HIP 9685, HIP 104308: These stars (M3V, F2V, A5V) were proposed by Zuckerman & Song (2004) to be members of THA. From our analysis, the inclusion of the radial velocity causes a decrease of their membership probabilities. For HIP 3556, HIP 9685 and HIP 104308, there is a

7-8 km s^{-1} difference between the measured and predicted radial velocities. It is unclear why the RV differ so much from the expected values. One possibility is that their radial velocity measurements are skewed by (unknown) binary orbital motion, whereas the true system radial velocities would be consistent with the predicted values. However, no binary component are known to be orbiting around these stars. It is also possible that these objects just happen to have space motions relatively far from the bulk motion of the association. We should note that there is a rather large uncertainty on the radial velocity measurements for these stars. For HIP 104308, Zuckerman & Webb (2000) noted that the measurement of the radial velocity was difficult (early type star, vsini > 100 km s^{-1}). To confirm the membership of these stars, we need better radial velocity monitoring.

HIP 83494 and HIP 84642 AB : These stars (A5V, G8V+M5V) were proposed by Zuckerman et al. (2011) to be members of THA. From our analysis, these stars seem to be field dwarfs. The main reason is that the Galactic positions (XYZ) of these stars are very different of the bulk position of the association. These stars are young as revealed by the presence of a circumstellar disk (Zuckerman et al. 2011) and lithium absorption for HIP 84642 AB (228 mÅ; Torres et al. 2006). It is possible that these objects just happen to have space motions relatively far from the bulk motion of the associations considered in this work.

9.1.4. *COL*

HIP 12413 A : This star (A1V) was proposed by Zuckerman et al. (2011) to be a member of COL. From our analysis, this star seems to be a member of βPMG ($P_{v+\pi}$=96%). There is a difference of only 0.9 km s^{-1} between the predicted radial velocities for βPMG (16.6 km s^{-1}) and COL (15.7 km s^{-1}). If we do not consider the RV information in our analysis, but still consider the photometry and trigonometric distance, the membership probability is 88% in THA. Zuckerman et al. (2011) note that HIP 12413 is a triple system (HIP 12413 A is a tight binary and HIP 12413 C a more distant (ρ=25$''$) M dwarf). Spectroscopic follow-up of the M dwarf, in particular to measure the Li absorption, would be very useful for constraining the age and the membership of this system.

HIP 30030 : This star (G0V) was proposed by Zuckerman & Song (2004) to be member of THA. From our analysis, this star has $P_{v+\pi}$=85% in COL. There is a difference of only 2.9 km s^{-1} between the predicted radial velocities for THA (19.3 km s^{-1}) and COL (22.2 km s^{-1}). The main reason for the higher probability in COL is its Galactic positions XYZ which are much similar to COL than THA.

9.1.5. *CAR*

HIP 30034 A : This star (K1Ve) was originally proposed by Zuckerman & Song (2004) to be a member of THA and by Torres et al. (2008) to be a member of CAR. Our analysis favors a membership in CAR albeit with a modest probability ($P_{v+\pi}$=71%, 27% in COL). There is a difference of only 1.0 km s^{-1} between the predicted radial velocities for COL (22.0 km s^{-1}) and CAR (23.0 km s^{-1}). The main reason for the higher probability in CAR is the Galactic positions YZ that are more similar to CAR than THA.

9.1.6. *ARG*

HIP 4448 AB : This binary (K3Ve+K4Ve) was proposed by Torres et al. (2008) to be member of ARG which is confirmed by our analysis ($P_{v+\pi}$=86%). The probability below 90% is explained by its U velocity of -16.1 km s^{-1} which is somewhat different from the average value of -22 km s^{-1} for ARG *bona fide members*.

HIP 57632: This star (A3V) was proposed by Zuckerman et al. (2011) to be a member of ARG which is confirmed by our analysis albeit with a modest probability ($P_{v+\pi}$=77%; 22% in the field). The relatively large uncertainty on the J band photometry does not explain this low probability since the latter remains low even when the photometry is excluded from the analysis. The main reason for its low probability is the Galactic space velocity V of this star (V=-16.0) which has a difference of 4 km s^{-1} with the average of ARG *bona fide members*.

9.1.7. *ABDMG*

HIP 93580: This star (A4V) was proposed by Zuckerman et al. (2011) to be a member of ABDMG. Our analysis also puts this object in ABDMG, but with a somewhat low probability ($P_{v+\pi}$=80%). The Galactic space velocity U (-11.3 km s^{-1}) is somewhat different from the bulk motion of ABMDG members (U=-7.1 km s^{-1}). It is possible that this object just happens to have space motions relatively far from the bulk motion of the association.

HIP 117452 AB: This binary (A0V*) was proposed by Zuckerman et al. (2011) to be a member of ABDMG. From our analysis, this star has a membership probability of $P_{v+\pi}$=92% in the field. We should note that our analysis is not optimal for this object because its $I_c - J <$ -0.1 is beyond the limit of our calculated sequences. If we do not consider the photometry in our analysis, but consider the radial velocity and the trigonometric distance, the membership probability changes to 99% in ABDMG. Zuckerman et al. (2011) detected a circumstellar disk excess at 24 and 70 μm. The tertiary companon of this system, HD 223340, is an early-K-type star about 75$''$ away that shows Li absorption with an $EW_{\rm Li}$=148 mÅ (Zuckerman et al. 2011) that is intermediate between that observed in stars of similar spectral types in ABDMG and THA (see Fig.5; Mentuch et al. 2008). Thus, we confirm HIP 117452 AB as a *bona fide member* of ABMDG.

HIP 14807: This star was proposed by Zuckerman & Song (2004) to be a member of ABDMG. HIP 14809 and HIP 14807 are a binary system. HIP 14807 is not listed as a *bona fide member* because no I_c and RV measurements are availables for this star. However, if we do not consider the RV and photometry information in our analysis, but still consider the trigonometric distance, the membership probability is 96% in ABDMG. Furthermore, the other binary component (HIP 14809) is confirmed to be in ABDMG with $P_{v+\pi}$=99%. Our analysis confirms that both stars are *bona fide members* of ABDMG.

9.2. *Candidate members*

To confirm the membership of our 164 candidate members, we should include other observables in our analysis, such as radial velocity or parallax measurements. In addition to performing our own radial velocity measurements for a number of our candidates, we searched in the literature and compiled all radial velocity measurements from the previous studies of Hawley et al. (1996); Montes et al. (2001); Gizis et al. (2002); Torres et al. (2006); Moór et al. (2006); Lépine & Simon (2009); Schlieder et al. (2010); Looper et al. (2010); Kiss et al. (2011); Rodriguez et al. (2011); Siebert et al. (2011);

Bowler et al. (2012); Shkolnik et al. (2012); Schlieder et al. (2012a,b). A good RV measurement ($\pm$2 km s^{-1}, not known to be spectroscopic binaries) is available for 35 of our 164 candidates, and Table 7 shows the membership probability before and after the inclusion of the radial velocity in our Bayesian analysis. In general, the membership probability increases or remains high after inclusion of the radial velocity measurement; thus, these stars (21/35) are strong candidate members of these seven young kinematic groups. For the other stars, the radial velocity measurement differs from those predicted for the seven young kinematic groups and need spectroscopic follow-up to search for various youth indicators. We searched the literature and compiled all available parallax measurements; we found this information for 16 candidates either from the literature (van Leeuwen 2007; Wahhaj et al. 2011; Shkolnik et al. 2012) and ongoing work (Riedel et al.), and Table 7 shows the membership probability before and after the inclusion of the radial velocity and the parallax in our Bayesian analysis.. Finally, we also compiled all available Li measurements, in addition to our own measurements; Li was measured for 12 candidates. Here we discuss the most promising candidates deserving more observations to confirm their status as young stars. We should note that full confirmation of the membership of these candidate members will require complete *UVWXYZ*, hence accurate proper motion, radial velocity and parallax measurements and observation of signs of youth.

9.2.1. *New highly probable candidate members*

Of our 164 candidate members with P $>$ 90%, 35 have a radial velocity measurement (of which 14 are from our work), 12 have Li detection (2 from our work), and 16 have a trigonometric parallax measurement. All new parallax measurements are compiled in Table 5. In general, there is a good agreement between the statistical distance inferred from our analysis and the true trigonometric one (see Table 8). We discuss below those candidate members with $P_v > 90\%$ and the presence of sign of youth or $P_\pi < 90\%$ or $P_{v+\pi} > 90\%$.

2MASSJ01112542+1526214 AB (GJ 3076) : We propose this binary (ρ=0.41$''$, M5V + M6V; Beuzit et al. 2004; Janson et al. 2012) as a highly probable member of βPMG with a P_v=99.99% at d_s=20$\pm$1 pc. Also, our analysis predicted the binary status of this star. Recently, a trigonometric distance (21.8$\pm$0.8 pc) was measured by Riedel et al. (in prep), in very good agreement with our predicted statistical distance. Including this parallax in our analysis yields a $P_{v+\pi}$=99.99% (binary) for βPMG (see Table 8). Our ESPaDOnS spectrum of 2MASSJ01112542+1526214 AB (unresolved) is shown in figure 12. It shows a strong EW_{Li} of 629$\pm$14 mÅ which is quite high for a candidate member of βPMG although there is no other known late-type dwarf in βPMG for comparison. Note that Montes et al. (2001) proposed this star as a young disk star, but did not assign it to any particular association. This star fits all requirements to be considered as a new *bona fide member* of βPMG.

2MASSJ05241914-1601153 AB : We propose this binary as a highly probable member of βPMG with a P_v=99.9% at d_s=20$\pm$5 pc. This candidate is a resolved binary system (M4.5V + M5.0V) that was discovered by Bergfors et al. 2010, with a separation of 0.639$\pm$0.001$''$. Our ESPaDOnS spectrum of 2MASSJ05241914-1601153 (unresolved) is shown in Figure 12. Li is clearly detected with an equivalent width of 223$\pm$27 mÅ. The broadened absorption line is an effect of the fast rotation of the star. This system is similar to the *bona fide* β*PMG member* M4Ve + M4.5V binary system HIP 112312 AB for which the latest spectral type object shows lithium absorption with an EW_{Li}=315$\pm$22 mÅ (Mentuch et al. 2008). This is a very strong candidate member of βPMG, and only a trigonometric distance measurement is needed to fully confirm its *bona fide* status.

2MASSJ05332558-5117131 (TYC 8098-414-1) : We proposed this K7Ve star as a highly probable candidate member of THA with P_v=99.9% at d_s=54$\pm$4 pc. This candidate seems to be a young dwarf because Torres et al. (2006) measured an EW_{Li}= 50 mÅ consistent with other *bona fide members* of THA for an age between 10 and 40 Myr. A trigonometric parallax measurement is needed to confirm the *bona fide* status of this star.

2MASSJ05531299-4505119: We propose this M0.5V star as a highly probable candidate member of ABDMG with P_v=99.9% at d_s=34$\pm$4 pc. This candidate seems to be a young dwarf because Torres et al. (2006) measured an EW_{Li}= 140 mÅ which is quite high for a candidate member of ABDMG. A trigonometric distance measurement and other youth indicators are needed to confirm its *bona fide* status.

2MASSJ18202275-1011131 (HIP 89874 AB) : From our analysis, this binary star (K5Ve+K7Ve; Tetzlaff et al. 2010) seems to be a highly probable candidate member of ARG with P=99% at d_s=34$\pm$4 pc. The membership probability with RV information is doubtful because there is a difference of 4.1 km s^{-1} between three published radial velocity measurements (-13.8, -9.7, -9.0 km s^{-1} Torres et al. 2006; López-Santiago et al. 2010; Montes et al. 2001). This large difference may come from the binary, or else it may reflect a large uncertainty due to the relatively fast rotation of the star (vsini = 20.1 km s^{-1}; López-Santiago et al. 2010). If we repeat our analysis with RV information (-13.8 km s^{-1}) and parallax measurement (13.17$\pm$3.81 mas; van Leeuwen 2007), the membership probability changes to 94% (binary) in βPMG. The predicted radial velocity is -24.8 km s^{-1} for ARG and -16.2 km s^{-1} for βPMG. Also, this star has a relatively strong EW_{Li} of 530 mÅ (Torres et al. 2006) suggestive an age of 5-15 Myr. Montes et al. (2001) proposed this star as a young disk member. The Galactic positions (71.2, 26.4, 2.9 pc) of this star is very different from those of *bona fide members* of young co-moving groups listed in Table 3. Could this star be a member of the Scorpius-Centaurus complex? Mamajek & Feigelson (2001) suggest that this is not the case since the star never had a close passage near Sco-Cen in the past.

2MASSJ13591045-1950034 (GJ 3820) : Without RV information, our analysis assigns this M4.5V flare star (Gizis et al. 2002) in ARG with P=95.6% at a statistical distance of 8$\pm$1 pc, in fair agreement with the measured parallax of 10.7$\pm$0.1 pc (Riedel, in prep). This star also has a measured RV of -15.8 km s^{-1} (Gizis et al. 2002). Including this RV and parallax in our analysis yields P_v=85% and $P_{v+\pi}$=99%, both in the field. This membership probability should be taken with caution, since Hawley et al. (1996) measured a RV of 35$\pm$10 km s^{-1} for this star, which is very different from the RV measurement of Gizis et al. (2002). These measurements suggest that this star may be a spectroscopic binary (sb1). Thus, although we cannot exclude that this star is young, it does not appear to be a likely member of any of the co-moving groups considered in this work. More RV monitoring is required to determine if this system is a binary. A measurement of EW_{Li} would also provide a very useful constraint on the age.

2MASSJ00503319+2449009 (HIP 3937), 2MASSJ03033668-2535329 (HIP 14239) : Our analysis suggests membership in ARG for both stars with P=99.9%. However, each have a trigonometric distance in disagreement with our statistical distances (see Tables 6, 7). When the parallax and radial velocity information are included into the analysis, both stars appear in the field (J0303-2535, $P_{v+\pi}$=99%; J0050+2449, $P_{v+\pi}$=99%).

2MASSJ23301341-2023271 (HIP 116003 AB) : Our analysis suggests this M3V* star to be a candidate member of COL with P_v=76%. The P_v should be taken with caution as this star is a known spectroscopic binary (Torres et al. 2006) which displays important RV variations. Indeed, Gizis et al. (2002) measured four times the RV of this star (11.7, -4.7, -16.7 and 30.1 km s^{-1}), and Torres et al. (2006) measured it three times with a mean RV=-5.7 km s^{-1}. The range of measured RVs includes our predicted value (-2.9 km s^{-1}) for COL. When the trigonometric distance (61.72±3.53 mas; van Leeuwen 2007) is taken into account, but excluding the RV information for the reason just mentioned, P_π=99% (binary) in βPMG. Torres et al. (2006) did not detect lithium absorption, however the quality of their spectrum is not good. Better measurements of age-dating indicators and additional radial velocity monitoring of this star would be useful to verify its status.

2MASSJ10121768-0344441 (HIP 49986): Our analysis suggests this (M1.5V) to be candidate member of ABDMG with P_v=91.4%. A parallax measurement is available for this star and the measured distance differs significatly from our predicted value (see Table 8). Thus, this star appears to be in the field with $P_{v+\pi}$=99%. In addition, no youth indicators have been measured for this star yet.

2MASSJ01351393-0712517, 2MASSJ01365516-0647379, 2MASSJ05254166-0909123, 2MASSJ20434114-2433534 and 2MASSJ23205766-0147373 : Our analysis suggests these stars to be candidate members of βPMG (J0135-0712,M4V; J0136-0647,M4V; J2043-2433,M3.7+M4.1), ARG (J2320-0147,M4+M4) and ABDMG (J0525-0909,M3.5+M4) with a membership probability of $P_{v+\pi} > 99\%$ (see Table 8). Only age-dating indicators are needed to fully confirm their *bona fide* status.

2MASSJ06131330-2742054, 2MASSJ20100002-2801410 and 2MASSJ20333759-2556521: From our analysis, we proposed these (M3.5; M2.5+M3.5; M4.5) stars to be candidate members of βPMG with a membership probability of P=99%. No RV measurement is available for these stars, however a trigonometric distance was measured by Riedel (in prep) for each star. When the parallax information is included into the analysis, they all appear to be in βPMG with $P_\pi > 99\%$. To confirm the membership of these stars, we need measurements of radial velocity and age-dating indicators.

9.2.2. *Previously identified in the literature*

Of the 71 candidate members of the seven young kinematic groups identified in the literature, 58 have $P > 90\%$ or $P_v > 90\%$ (see table 7); those are thus likely to be true members of the associations. We discuss below the remaining 13 stars and also those star for which we assign an association membership different from that previously proposed in the literature. Also, we discussed 5 new *bona fide members* of βPMG (2) and ABDMG (3).

2MASSJ00233468+2014282 (TYC 1186-706-1): This star (K7.5V) was proposed by Lépine & Simon (2009) to be a member of βPMG. From our analysis, this star has an ambiguous membership (P_v) of 55% in the field and 35% in COL. If we exclude the photometry of the star from our analysis, but include the RV information, then it has a membership probability of 85% in the field. To confirm the membership of this star, we need a trigonometric distance and measurements of age-dating indicators.

2MASSJ01220441-3337036 (TYC 7002-2219-1) : This star (K7Ve) was proposed by Schlieder et al. (2010) to be candidate member of ABDMG. From our analysis, this star is a candidate member of THA (P_v =99%) due to RVs (4.8, 3.0±1.4 km s^{-1}; Torres et al. 2006; Schlieder et al. 2010) much closer to that predicted for THA (4.5±1.3 km s^{-1}) compared to ABDMG (18.2±2.1 km s^{-1}). Torres et al. (2006) did not detect lithium absorption for this star, however there is no other K7V in THA for comparison. To confirm our hypothesis, we need a trigonometric distance measurement.

2MASSJ03241504-5901125 : Torres et al. (2000) and de la Reza & Pinzón (2004) proposed this star (K7V) as a candidate member of THA. From our analysis, this star seems to be a highly probable candidate member of COL (P_v=99%) due to a RV (17.5±1.3 km s^{-1}; Torres et al. 2006) much closer to that predicted for COL (17.6±1.0 km s^{-1}) compared to THA (13.8±1.6 km s^{-1}). This candidate seems to be a young star with an EW_{Li} = 235 mÅ (Torres et al. 2006), consistent with the *bona fide members* of young associations with an age less than 40 Myr.

2MASSJ09361593+3731456 (HIP 47133): This binary star (M2+M2) was proposed by Schlieder et al. (2012a) to be a member of the βPMG. From our analysis, this star is a likely member of the field with P=99%, P_v=99%, P_π=99% and $P_{v+\pi}$=99%. (Schlieder et al. 2012b) found that this star is a spectroscopic binary (M2+M2) and have measured a RV of -2.5±1.0 km s^{-1}). The main reason for this star to be in the field is that its Galactic position Z (25.1 pc) is far (39 pc away) from the center of βPMG *bona fide members*. A measurement of EW_{Li} would also provide a very useful constraint on the age.

2MASSJ11254754-4410267 : This binary M4+M4.5 star was proposed by Rodriguez et al. (2011) to be a candidate member of TWA. From our analysis, this star has a membership probability of P_v=99.9% (binary) in ABDMG. This star has an EW_{Li} = <30 mÅ (Rodriguez et al. 2011), which is consistent with members of ABDMG of similar spectral type. A parallax measurement is needed to confirm the membership of this star in ABDMG.

2MASSJ11455177-5520456 (CD-54 4320): This star (K5Ve) was proposed by Torres et al. (2008) to be a member of CAR. From our analysis, this star has an ambiguous membership (P_v) of 46% in TWA and 48% in COL. The measured RV (16.1 km s^{-1}) falls slightly closer to the predicted value for COL, although there is a difference of only 2.0 km s^{-1} between the predicted radial velocities for TWA (11.8 km s^{-1}) and COL (13.9 km s^{-1}). da Silva et al. (2009) measured an EW_{Li}=190 mÅ, which confirm its age similar to THA/COL/CAR *bona fide members*.

2MASSJ11493184-7851011 (V* DZ Cha) : Torres et al. (2008) proposed this star (M1V) as a candidate member of ϵ Cha. From our analysis, this star is a highly probable candidate member of βPMG with P_v=91%. Our analysis gives a statistical distance of 71±6 pc, which would make this star as one of the most distant members of βPMG. As noted earlier, caution should be applied for our candidates with large statis-

tical distances as we did not include the associations beyond 100 pc in our analysis. It is thus possible that this star is a member of the more distant (∼110 pc) ϵ Cha association (∼8 Myr), whose spatial velocity is close to that of βPMG. The EW_{Li} of this star was measured by da Silva et al. (2009, ;560 mÅ), and it is somewhat larger than those of βPMG members of similar spectral types. This is clearly a young star, but a parallax measurement is needed to confirm its membership. And ideally we should add the ϵ Cha association in our analysis.

2MASSJ12151838-0237283 (TYC 4943-192-1): This star (M0Ve) was proposed by Schlieder et al. (2010) to be a member of ABDMG. From our analysis, this star has an ambiguous membership (P_v) of 83% in ABDMG and 17% in the field. Although a promising candidate for ABDMG, age-dating indicators and a trigonometric parallax are needed to confirm its membership.

TWA 15 A (2MASSJ12342064-4815135) and TWA 15 B (2MASSJ12342047-4815195) These stars (M1.5V and M2V) were proposed by de la Reza et al. (2006) to be members of TWA. Torres et al. (2008) rejected these stars as TWA members but suggested that they could be members of the Scorpius-Centaurus complex. From our analysis, these stars have membership probabilities (P) of 99% and P_v =99% in the field. We repeated our analysis without considering the photometry of the star and the membership probabilities are still 99% for the field. However, these stars appear to be young since Mentuch et al. (2008) unveiled lithium absorption for all of them (EW_{Li}=494 and 484 mÅ for TWA 15A and 15B, respectively). To confirm their membership, we should add in our analysis the Scorpius-Centaurus complex.

TWA 18 (2MASSJ13213722-4421518): This star (M0Ve) was proposed by de la Reza et al. (2006) to be a member of TWA. From our analysis, this candidate member has a membership probability (P_v) of 89.2% at d_s=60±5 pc for TWA. This star is confirmed to be young since Mentuch et al. (2008) measured an EW_{Li}= 464 mÅ, consistent with the age of TWA. A trigonometric distance measurement is needed to confirm its membership.

2MASSJ16430128-1754274: This star (M0.5V) was proposed by Kiss et al. (2011) to be a member of βPMG. From our analysis, this star has an ambiguous membership (P_v) of 65% in the field and 35% in βPMG. However, Kiss et al. (2011) measured EW_{Li}=300±20 mÅ confirming that the age of this star is similar to that of βPMG *bona fide members*. To confirm the membership, we need a trigonometric distance measurement.

2MASSJ20072376-5147272 (CD-52 9381): This star (K6Ve) was proposed by Torres et al. (2008) to be a member of ARG. From our analysis, this star has a membership probability (P_v) of 89.5% in ARG at d_s=31±1 pc. This star shows EW_{Li}=60 mÅ (da Silva et al. 2009), consistent with an age less than 70 Myr. To confirm the membership of this star, we need a parallax measurement.

2MASSJ21212446-6654573 (HIP 105441 A,B): This system (K2V+K7V, ρ=26″) was proposed by Zuckerman et al. (2001b) to be a member of THA, and by Ortega et al. (2009) to be a member of βPMG. From our analysis, this system seems to be a member of βPMG with P_v=99%. If we take into account the trigonometric distance of HIP 105441 A (π=33.14±1.45 mas; van Leeuwen 2007), the membership probability $P_{v+\pi}$ is 99% for βPMG. We should note that its radial velocity is quite uncertain from previous studies (A:6.4±14.8,-24.1,Kharchenko et al. (2007); Torres et al. (2006), B:3.3 km s^{-1},Torres et al. (2006). HIP 105441 A could thus be a spectroscopic binary (Torres et al. 2006). The predicted radial velocity measurement is 5.7 km s^{-1} for βPMG. When the trigonometric distance is taken into account, but excluding the RV information for the reason just mentioned, P_π=99% in βPMG. However, Torres et al. (2006) showed that HIP 105441 A does not have a Li detection but measured an EW_{Li}=15 mÅ for HIP 105441 B (K7V). To confirm membership, we need more radial velocity measurements and other age-dating measurements for the two stars.

2MASSJ22424884+1330532 (TYC 1158-1185-1 N,S): This binary (K5Ve*) was proposed by Schlieder et al. (2010) to be a candidate member of βPMG, however this star was ruled out after RV measurement. From our analysis, this star has an ambiguous membership (P) of 46% in βPMG and 48% in the field. There is a difference of only 0.7 km s^{-1} between the predicted radial velocities for βPMG (-8.0 km s^{-1}) and the field (-7.3 km s^{-1}). If we exclude the photometry of the star from our analysis, but include the RV information, then it has a membership probability of 60% in COL and 40% in the field. The RV measurement (-14.9 km s^{-1}) is much closer to the predicted radial velocity for COL (-14.4 km s^{-1}) compared to the field or βPMG. To confirm the membership, we need a trigonometric distance and measurements of age-dating indicators.

2MASSJ05064991-2135091 A, 2MASSJ05064946-2135038 BC (GJ 3332) : This close visual binary (A: M1Ve and BC:M3.5V+M4V, ρ=1.2″; Torres et al. 2008) was proposed by Torres et al. (2008) to be a member of βPMG. From our analysis, the membership probability P_v is 96% in COL for the component A and 99% in βPMG (component BC). The higher probability in COL for component A is mainly due to a difference in space velocity, which could be the result of orbital motion. This system is known to be young as da Silva et al. (2009) measured EW_{Li}=20 mÅ, for both components A and BC; these values are consistent with the age of βPMG, and the component's spectral types, although it is a bit low for the A component. Recently, a trigonometric distance (19.2±0.5 pc) was measured by Riedel (in prep) which is consistent with our predicted statistical distances for βPMG. With the parallax measurement included into our analysis, both components appear to be in βPMG with a very high membership probability of $P_{v+\pi}$=99.9% (see Table 8). This close visual binary fits all requirements to be considered as a new *bona fide member* of βPMG.

2MASSJ06091922-3549311 (CD-35 2722) : We confirm the membership of this M0.5Ve star in ABDMG, as previously proposed by Torres et al. (2008). Recently, the NICI Planet-Finding Campaign confirmed that this star has a L4±1 companion physically associated with the primary star (Wahhaj et al. 2011). From this study, a trigonometric distance was measured at 21.3±1.4 pc. From our analysis, we obtain P_v = 99.9% and $P_{v+\pi}$ = 99.9% for ABDMG. This star shows many signs of youth such as EW_{Li} =10 mÅ, X-ray and Hα emission, consistent with *bona fide members* of ABDMG. This star fits all requirements to be considered as a new *bona fide member* of ABDMG. Thereby, the L4±1 companion is the lowest mass *bona fide member* of ABDMG.

2MASSJ04522441-1649219 (TYC 5899-26-1): We confirm the membership of this M3Ve* star in ABDMG, as previously proposed by Torres et al. (2008) and confirmed by Schlieder et al. (2010) with RV measurement. Recently,

a trigonometric distance was measured at 16.3±0.4 pc by Shkolnik et al. (2012). From our analysis, we obtain P_v = 99.9% (binary) and $P_{v+\pi}$ = 99.9% (binary) for ABDMG. This star shows many signs of youth such as EW_{Li} =20 mÅ , X-ray and Hα emission, consistent with *bona fide members* of ABDMG. This star fits all requirements to be considered as a new *bona fide member* of ABDMG.

2MASSJ21521039+0537356 (HIP 107948): This star (M2Ve) was proposed by Torres et al. (2008) to be a member of ABDMG. Shkolnik et al. (2012) measured a radial velocity of -15.1±1.5 km s^{-1} and a trigonometric distance at 30.5±5.3 pc. With this new measurements, our analysis gives a P_v = 99.9% (binary) and $P_{v+\pi}$ = 99.9% (binary) for ABDMG. This star shows many signs of youth such as EW_{Li} =10 mÅ , X-ray and Hα emission, consistent with *bona fide members* of ABDMG. Shkolnik et al. (2009) estimated the age of this star between 20 and 150 Myr from various spectroscopic indices. This star fits all requirements to be considered as a new *bona fide member* of ABDMG.

10. SUMMARY AND CONCLUSION

The study presented in this paper aims at extending the census of low-mass star members of seven young associations of the solar neighborhood: the β Pictoris and AB Doradus moving groups, the TW Hydrae, Tucana-Horologium, Columba, Carina and Argus associations. To identifiy new members in these associations, we developed a Bayesian statistical analysis which, based on the values of 6 observables (I_c and J magnitudes, amplitude of proper motion in right ascension and declination, right ascension and declination), computes a membership probability to a given association as well as the most probable (statistical) distance.

Starting from a sample of 758 stars, all showing indicators of youth such as Hα and X-rays emission, our analysis selected 164 young stars of spectral type between K5V and M5V with a membership probability over 90%. We find one of theses candidates in the TWA, 37 in the β PMG, 17 in the THA, 20 in the COL, 6 in the CAR, 50 in the ARG and 33 in the ABDMG. We also quantified the reliablity of our analysis by determining the recovery rate of known members of these associations; the recevery rate is better than 90%. We also performed a Monte Carlo analysis to determine the expected number of false detections. The false alarm rate is typically between 5 and 15% depending on the association, thus showing that our method is very effective at identifying genuine members of young associations.

The kinematic models used in our statistical analysis predict the radial velocity of a candidate member, thus radial velocity follow-ups provide a powerful tool to further confirm membership. We initiated a program to measure the radial velocity of our new candidates. The first results for 14 candidates show that adding their radial velocity measurement to the analysis yields probabilities above 99%. To clearly establish the young age of the candidate members of βPMG and THA, we initiated a program to detect the presence of photospheric lithium. Early results allowed us to detect lithium for 2 of our candidate members of βPMG: 2MASSJ05241914-1601153 (M4.5V+M5V) and 2MASSJ01112542+1526214 (M5V+M6V). Also another of our candidates in THA, 2MASSJ05332558-5117131 (K7Ve), has both a radial velocity confirmation (from Torres et al. 2006 and our work) and a lithium detection (from Torres et al. 2006). Finally, we propose that six stars should be considered as new *bona fide* members of βPMG (2MASSJ01112542+1526214, J05064991-2135091 and J05064946-2135038) and ABDMG (2MASSJ06091922-3549311, J04522441-1649219 and J21521039+0537356).

The authors would like to thank Emilie Storer for helping with the compilation of *bona fide* member lists, the night assistant J. Vasquez at the CTIO 0.9m, the Gemini and CFHT staff for carrying out the observations, and Marie-Eve Naud for carefully reviewing the candidate member lists. Finally, we would like to thank our referee, Eric Mamajek, for excellent suggestions that greatly improved the quality of this paper.

This work was supported in part through grants from the the Fond de Recherche Québécois - Nature et Technologie and the Natural Science and Engineering Research Council of Canada. This research has made use of the SIMBAD database, operated at Centre de Données astronomiques de Strasbourg (CDS), Strasbourg, France. This research has made use of the VizieR catalogue access tool, CDS, Strasbourg, France (Ochsenbein et al. 2000).

Based on observations obtained at the Gemini Observatory, which is operated by the Association of Universities for Research in Astronomy, Inc., under a cooperative agreement with the NSF on behalf of the Gemini partnership: the National Science Foundation (United States), the Science and Technology Facilities Council (United Kingdom), the National Research Council (Canada), CONICYT (Chile), the Australian Research Council (Australia), Ministério da Ciência, Tecnologia e Inovação (Brazil) and Ministerio de Ciencia, Tecnología e Innovación Productiva (Argentina).

The DENIS project has been partly funded by the SCIENCE and the HCM plans of the European Commission under grants CT920791 and CT940627. It is supported by INSU, MEN and CNRS in France, by the State of Baden-Württemberg in Germany, by DGICYT in Spain, by CNR in Italy, by FFwFBWF in Austria, by FAPESP in Brazil, by OTKA grants F-4239 and F-013990 in Hungary, and by the ESO C&EE grant A-04-046. Jean Claude Renault from IAP was the Project manager. Observations were carried out thanks to the contribution of numerous students and young scientists from all involved institutes, under the supervision of P. Fouqué, survey astronomer resident in Chile.

Funding for RAVE has been provided by: the Australian Astronomical Observatory; the Leibniz-Institut fuer Astrophysik Potsdam (AIP); the Australian National University; the Australian Research Council; the French National Research Agency; the German Research Foundation (SPP 1177 and SFB 881); the European Research Council (ERC-StG 240271 Galactica); the Istituto Nazionale di Astrofisica at Padova; The Johns Hopkins University; the National Science Foundation of the USA (AST-0908326); the W. M. Keck foundation; the Macquarie University; the Netherlands Research School for Astronomy; the Natural Sciences and Engineering Research Council of Canada; the Slovenian Research Agency; the Swiss National Science Foundation; the Science & Technology Facilities Council of the UK; Opticon; Strasbourg Observatory; and the Universities of Groningen, Heidelberg and Sydney. The RAVE web site is at http://www.rave-survey.org.

REFERENCES

Adelman-McCarthy, J. K., & et al. 2011, VizieR Online Data Catalog, 2306, 0

Anderson, E., & Francis, C. 2012, Astronomy Letters, 38, 331

Bailey, III, J. I., White, R. J., Blake, C. H., Charbonneau, D., Barman, T. S., Tanner, A. M., & Torres, G. 2012, ApJ, 749, 16
Baraffe, I., Chabrier, G., Allard, F., & Hauschildt, P. H. 1998, A&A, 337, 403
—. 2002, A&A, 382, 563
Barrado Y Navascués, D. 2006, A&A, 459, 511
Barrado y Navascués, D., Stauffer, J. R., & Jayawardhana, R. 2004, ApJ, 614, 386
Barrado y Navascués, D., Stauffer, J. R., Song, I., & Caillault, J. 1999, ApJ, 520, L123
Bergfors, C., et al. 2010, A&A, 520, A54+
Beuzit, J.-L., et al. 2004, A&A, 425, 997
Bobylev, V. V., & Bajkova, A. T. 2007, Astronomy Letters, 33, 571
Bobylev, V. V., Goncharov, G. A., & Bajkova, A. T. 2007, VizieR Online Data Catalog, 908, 30821
Bowler, B. P., Liu, M. C., Shkolnik, E. L., Dupuy, T. J., Cieza, L. A., Kraus, A. L., & Tamura, M. 2012, ArXiv e-prints
Casagrande, L., Flynn, C., & Bessell, M. 2008, MNRAS, 389, 585
Chen, C. H., Mamajek, E. E., Bitner, M. A., Pecaut, M., Su, K. Y. L., & Weinberger, A. J. 2011, ApJ, 738, 122
Cutri, R. M., et al. 2003, VizieR Online Data Catalog, 2246, 0
da Silva, L., Torres, C. A. O., de La Reza, R., Quast, G. R., Melo, C. H. F., & Sterzik, M. F. 2009, A&A, 508, 833
de La Reza, R., da Silva, L., Jilinski, E., Torres, C. A. O., & Quast, G. 2001, in Astronomical Society of the Pacific Conference Series, Vol. 244, Young Stars Near Earth: Progress and Prospects, ed. R. Jayawardhana & T. Greene, 37–+
de la Reza, R., Jilinski, E., & Ortega, V. G. 2006, AJ, 131, 2609
de la Reza, R., & Pinzón, G. 2004, AJ, 128, 1812
de la Reza, R., Torres, C. A. O., Quast, G., Castilho, B. V., & Vieira, G. L. 1989, ApJ, 343, L61
Desidera, S., et al. 2011, A&A, 529, A54
Donati, J.-F., Catala, C., Landstreet, J. D., & Petit, P. 2006, in Astronomical Society of the Pacific Conference Series, Vol. 358, Astronomical Society of the Pacific Conference Series, ed. R. Casini & B. W. Lites, 362–+
Donati, J.-F., Semel, M., Carter, B. D., Rees, D. E., & Collier Cameron, A. 1997, MNRAS, 291, 658
Doyon, R., Lafrenière, D., Artigau, E., Malo, L., & Marois, C. 2010, in In the Spirit of Lyot 2010
Eggen, O. J. 1958, MNRAS, 118, 65
—. 1995, AJ, 110, 2862
Epchtein, N., et al. 1997, The Messenger, 87, 27
Faherty, J. K., et al. 2012, ArXiv e-prints
Fernández, D., Figueras, F., & Torra, J. 2008, A&A, 480, 735
Francis, C., & Anderson, E. 2009, New Astronomy, 14, 615
Gizis, J. E., Jao, W.-C., Subasavage, J. P., & Henry, T. J. 2007, ApJ, 669, L45
Gizis, J. E., Reid, I. N., & Hawley, S. L. 2002, AJ, 123, 3356
Gliese, W., & Jahreiss, H. 1991, NASA STI/Recon Technical Report A, 92, 33932
Gontcharov, G. A. 2006, Astronomy Letters, 32, 759
Gregorio-Hetem, J., Lepine, J. R. D., Quast, G. R., Torres, C. A. O., & de La Reza, R. 1992, AJ, 103, 549
Grenier, S., et al. 1999, A&AS, 137, 451
Guenther, E. W., Esposito, M., Mundt, R., Covino, E., Alcalá, J. M., Cusano, F., & Stecklum, B. 2007, A&A, 467, 1147
Hawley, S. L., Gizis, J. E., & Reid, I. N. 1996, AJ, 112, 2799
Helou, G., & Walker, D. W., eds. 1988, Infrared astronomical satellite (IRAS) catalogs and atlases. Volume 7: The small scale structure catalog, Vol. 7
Herbig, G. H., & Bell, K. R. 1988, Third Catalog of Emission-Line Stars of the Orion Population : 3 : 1988
Hinkle, K. H., et al. 2003, in Presented at the Society of Photo-Optical Instrumentation Engineers (SPIE) Conference, Vol. 4834, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, ed. P. Guhathakurta, 353–363
Høg, E., et al. 2000, A&A, 355, L27
Janson, M., et al. 2012, ArXiv e-prints
Jayawardhana, R., Coffey, J., Scholz, A., Brandeker, A., & van Kerkwijk, M. H. 2006, ApJ, 648, 1206
Johnson, D. R. H., & Soderblom, D. R. 1987, AJ, 93, 864
Kastner, J. H., Zuckerman, B., Weintraub, D. A., & Forveille, T. 1997, Science, 277, 67
Kharchenko, N. V., Scholz, R., Piskunov, A. E., Roeser, S., & Schilbach, E. 2007, VizieR Online Data Catalog, 3254, 0
Kiss, L. L., et al. 2011, MNRAS, 411, 117
Koen, C., Kilkenny, D., van Wyk, F., Cooper, D., & Marang, F. 2002, MNRAS, 334, 20
Koen, C., Kilkenny, D., van Wyk, F., & Marang, F. 2010, MNRAS, 403, 1949
Landolt, A. U. 2009, AJ, 137, 4186
Lepine, S., & Shara, M. M. 2005, VizieR Online Data Catalog, 1298, 0
Lépine, S., & Simon, M. 2009, AJ, 137, 3632
Looper, D. L., Bochanski, J. J., Burgasser, A. J., Mohanty, S., Mamajek, E. E., Faherty, J. K., West, A. A., & Pitts, M. A. 2010, AJ, 140, 1486
López-Santiago, J., Montes, D., Crespo-Chacón, I., & Fernández-Figueroa, M. J. 2006, ApJ, 643, 1160
López-Santiago, J., Montes, D., Gálvez-Ortiz, M. C., Crespo-Chacón, I., Martínez-Arnáiz, R. M., Fernández-Figueroa, M. J., de Castro, E., & Cornide, M. 2010, A&A, 514, A97+
Luhman, K. L., Stauffer, J. R., & Mamajek, E. E. 2005, ApJ, 628, L69
Makarov, V. V. 2007, ApJS, 169, 105
Makarov, V. V., & Urban, S. 2000, MNRAS, 317, 289
Mamajek, E. E. 2005, ApJ, 634, 1385
Mamajek, E. E., & Feigelson, E. D. 2001, in Astronomical Society of the Pacific Conference Series, Vol. 244, Young Stars Near Earth: Progress and Prospects, ed. R. Jayawardhana & T. Greene, 104–115
Mamajek, E. E., Lawson, W. A., & Feigelson, E. D. 2000, ApJ, 544, 356
Marois, C., Macintosh, B., Barman, T., Zuckerman, B., Song, I., Patience, J., Lafrenière, D., & Doyon, R. 2008, Science, 322, 1348
Mazeh, T., Prato, L., Simon, M., Goldberg, E., Norman, D., & Zucker, S. 2002, ApJ, 564, 1007
Mentuch, E., Brandeker, A., van Kerkwijk, M. H., Jayawardhana, R., & Hauschildt, P. H. 2008, ApJ, 689, 1127
Messina, S., Desidera, S., Turatto, M., Lanzafame, A. C., & Guinan, E. F. 2010, A&A, 520, A15+
Mohanty, S., Jayawardhana, R., & Barrado y Navascués, D. 2003, ApJ, 593, L109
Montes, D., López-Santiago, J., Gálvez, M. C., Fernández-Figueroa, M. J., De Castro, E., & Cornide, M. 2001, MNRAS, 328, 45
Moór, A., Ábrahám, P., Derekas, A., Kiss, C., Kiss, L. L., Apai, D., Grady, C., & Henning, T. 2006, ApJ, 644, 525
Nakajima, T., & Morino, J.-I. 2012, AJ, 143, 2
Nakajima, T., Morino, J.-I., & Fukagawa, M. 2010, AJ, 140, 713
Ochsenbein, F., Bauer, P., & Marcout, J. 2000, A&AS, 143, 23
Ortega, V. G., Jilinski, E., de la Reza, R., & Bazzanella, B. 2009, AJ, 137, 3922
Perryman, M. A. C., et al. 1997, A&A, 323, L49
Phan-Bao, N., et al. 2003, A&A, 401, 959
Reid, I. N., & Cruz, K. L. 2002, AJ, 123, 2806
Reid, I. N., et al. 2003, AJ, 126, 3007
—. 2004, AJ, 128, 463
Riaz, B., Gizis, J. E., & Harvin, J. 2006, AJ, 132, 866
Rice, E. L., Faherty, J. K., & Cruz, K. L. 2010, ApJ, 715, L165
Riedel, A. R., Murphy, S. J., Henry, T. J., Melis, C., Jao, W.-C., & Subasavage, J. P. 2011, AJ, 142, 104
Rodriguez, D. R., Bessell, M. S., Zuckerman, B., & Kastner, J. H. 2011, ApJ, 727, 62
Roeser, S., Demleitner, M., & Schilbach, E. 2010, AJ, 139, 2440
Roeser, S., Schilbach, E., Schwan, H., Kharchenko, N. V., Piskunov, A. E., & Scholz, R. 2008, VizieR Online Data Catalog, 1312, 0
Rucinski, S. M., & Krautter, J. 1983, A&A, 121, 217
Salim, S., & Gould, A. 2003, ApJ, 582, 1011
Schlieder, J. E., Lépine, S., & Simon, M. 2010, AJ, 140, 119
—. 2012a, ArXiv e-prints
Schlieder, J. E., Lepine, S., & Simon, M. 2012b, ArXiv e-prints
Shkolnik, E., Liu, M. C., & Reid, I. N. 2009, ApJ, 699, 649
Shkolnik, E. L., Anglada-Escude, G., Liu, M. C., Bowler, B. P., Weinberger, A. J., Boss, A. P., Reid, I. N., & Tamura, M. 2012, ArXiv e-prints
Shkolnik, E. L., Liu, M. C., Reid, I. N., Dupuy, T., & Weinberger, A. J. 2011, ApJ, 727, 6
Siebert, A., et al. 2011, AJ, 141, 187
Skrutskie, M. F., et al. 2006, AJ, 131, 1163
Song, I., Zuckerman, B., & Bessell, M. 2012, ArXiv e-prints
Song, I., Zuckerman, B., & Bessell, M. S. 2003, ApJ, 599, 342
—. 2004, ApJ, 614, L125
Steinmetz, M., et al. 2006, AJ, 132, 1645
Stelzer, B., & Neuhäuser, R. 2000, A&A, 361, 581
Teixeira, R., Ducourant, C., Chauvin, G., Krone-Martins, A., Bonnefoy, M., & Song, I. 2009, A&A, 503, 281
Teixeira, R., Ducourant, C., Chauvin, G., Krone-Martins, A., Song, I., & Zuckerman, B. 2008, A&A, 489, 825
Tetzlaff, N., Neuhaeuser, R., & Hohle, M. M. 2010, VizieR Online Data Catalog, 741, 190
Torres, C. A. O., da Silva, L., Quast, G. R., de la Reza, R., & Jilinski, E. 2000, AJ, 120, 1410
Torres, C. A. O., Quast, G. R., da Silva, L., de La Reza, R., Melo, C. H. F., & Sterzik, M. 2006, A&A, 460, 695
Torres, C. A. O., Quast, G. R., de La Reza, R., da Silva, L., & Melo, C. H. F. 2001, in Astronomical Society of the Pacific Conference Series, Vol. 244, Young Stars Near Earth: Progress and Prospects, ed. R. Jayawardhana & T. Greene, 43–+
Torres, C. A. O., Quast, G. R., de La Reza, R., da Silva, L., Melo, C. H. F., & Sterzik, M. 2003, in Astrophysics and Space Science Library, Vol. 299, Open Issues in Local Star Formation, ed. J. Lépine & J. Gregorio-Hetem, 83
Torres, C. A. O., Quast, G. R., Melo, C. H. F., & Sterzik, M. F. 2008, Young Nearby Loose Associations, ed. B. Reipurth, 757–+
Upgren, A. R., & Harlow, J. J. B. 1996, PASP, 108, 64
van Leeuwen, F., ed. 2007, Astrophysics and Space Science Library, Vol. 350, Hipparcos, the New Reduction of the Raw Data
Voges, W. 1994, in New Horizon of X-Ray Astronomy. First Results from ASCA, ed. F. Makino & T. Ohashi, 197–+
Wahhaj, Z., et al. 2011, ApJ, 729, 139
Webb, R. A., Zuckerman, B., Platais, I., Patience, J., White, R. J., Schwartz, M. J., & McCarthy, C. 1999, ApJ, 512, L63
Weis, E. W. 1987, AJ, 93, 451
—. 1991, AJ, 102, 1795
White, R. J., Gabor, J. M., & Hillenbrand, L. A. 2007, AJ, 133, 2524
Zacharias, N., et al. 2009, VizieR Online Data Catalog, 1315, 0
Zacharias, N., Monet, D. G., Levine, S. E., Urban, S. E., Gaume, R., & Wycoff, G. L. 2005, VizieR Online Data Catalog, 1297, 0

Zickgraf, F.-J., Krautter, J., Reffert, S., Alcalá, J. M., Mujica, R., Covino, E., & Sterzik, M. F. 2005, A&A, 433, 151
Zuckerman, B., Rhee, J. H., Song, I., & Bessell, M. S. 2011, ApJ, 732, 61
Zuckerman, B., & Song, I. 2004, ARA&A, 42, 685
Zuckerman, B., Song, I., & Bessell, M. S. 2004, ApJ, 613, L65
Zuckerman, B., Song, I., Bessell, M. S., & Webb, R. A. 2001a, ApJ, 562, L87
Zuckerman, B., Song, I., & Webb, R. A. 2001b, ApJ, 559, 388
Zuckerman, B., & Webb, R. A. 2000, ApJ, 535, 959
Zuckerman, B., Webb, R. A., Schwartz, M., & Becklin, E. E. 2001c, ApJ, 549, L233
Zwitter, T., et al. 2008, AJ, 136, 421

TABLE 3

BONA FIDE MEMBERS OF YOUNG KINEMATIC GROUPS

Name	Spt	α (J2000.0) hh mm ss.ss	δ (J2000.0) dd mm ss.s	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	v_{rad}[c] (km s^{-1})	π[d] (mas)	I[e] (mag)	J (mag)	X-ray[f] log(f_X)	U (km s^{-1})	V (km s^{-1})	W (km s^{-1})	X (pc)	Y (pc)	Z (pc)
							β Pictoris Moving Group									
HIP 560	F2IV	00 06 50.08	−23 06 27.1	97.81 ± 0.42	−47.12 ± 0.21	6.50 ± 3.50[n]	25.39 ± 0.38	5.74	5.45 ± 0.02	−12.36	−11.0 ± 0.4	−15.1 ± 0.6	−10.2 ± 3.4	4.5	5.9	−38.7
HIP 10679	G2V	02 17 24.72	+28 44 30.5	80.15 ± 4.38	−78.40 ± 4.91	4.99 ± 1.26[n]	36.58 ± 5.83	7.06	6.57 ± 0.02	−11.53	−9.0 ± 1.3	−10.1 ± 2.2	−7.2 ± 1.1	−19.3	13.6	−13.9
HIP 10680	F5V	02 17 25.27	+28 44 42.3	87.60 ± 2.12	−72.40 ± 2.46	4.87 ± 1.37[n]	28.97 ± 2.88	6.40	6.05 ± 0.03	…	−11.4 ± 1.3	−13.7 ± 1.8	−7.2 ± 0.9	−24.3	17.1	−17.5
HIP 11152	M3Ve	02 23 26.63	+22 44 06.9	92.43 ± 3.05	−113.69 ± 2.36	10.40 ± 2.00[y]	34.86 ± 2.84	9.44[ll]	8.18 ± 0.02	−11.41	−12.2 ± 1.5	−13.6 ± 1.7	−13.1 ± 1.3	−20.1	12.0	−16.6
HIP 11360[a]	F4IV	02 26 16.25	+06 17 33.1	86.31 ± 0.71	−49.97 ± 0.45	8.80 ± 3.00[s]	22.11 ± 0.64	6.33	6.03 ± 0.02	−12.18	−13.3 ± 1.9	−18.0 ± 0.9	−5.9 ± 2.3	−27.8	9.6	−34.4
HIP 11437 A	K8	02 27 29.24	+30 58 24.6	79.78 ± 2.56	−70.02 ± 1.73	6.74 ± 0.03	25.03 ± 2.25	8.78	7.87 ± 0.03	−11.37	−13.4 ± 0.8	−14.1 ± 1.6	−8.4 ± 0.6	−29.4	19.8	−18.5
HIP 11437 B	M0	02 27 28.04	+30 58 40.5	79.78 ± 2.56	−70.02 ± 1.73	5.96 ± 0.04	25.03 ± 2.25	10.11[p]	8.82 ± 0.04	−11.37	−12.8 ± 0.8	−14.5 ± 1.6	−8.0 ± 0.6	−29.4	19.8	−18.5
HIP 12545 AB[a]	K6Ve(sb1)	02 41 25.89	+05 59 18.1	79.47 ± 3.05	−53.89 ± 1.74	8.25 ± 0.05	23.79 ± 1.50	8.81	7.90 ± 0.03	−11.39	−10.9 ± 0.5	−16.9 ± 1.2	−5.3 ± 0.3	−27.5	7.0	−31.0
HIP 21547	F0V	04 37 36.13	−02 28 24.8	44.22 ± 0.34	−64.39 ± 0.27	21.00 ± 4.50[o]	33.98 ± 0.34	4.89	4.74 ± 0.04	…	−14.0 ± 3.7	−16.2 ± 1.2	−10.0 ± 2.3	−24.0	−8.1	−15.0
GJ 3305 AB	M0.5*	04 37 37.46	−02 29 28.2	46.00 ± 2.80	−64.80 ± 3.00	20.10 ± 0.01[p]	33.98 ± 0.34	8.61[p]	7.30 ± 0.02	−10.81	−13.3 ± 0.2	−16.1 ± 0.4	−9.4 ± 0.3	−24.0	−8.1	−15.0
HIP 23200	M0Ve	04 59 34.83	+01 47 00.7	34.60 ± 2.34	−94.27 ± 1.44	19.82 ± 0.04	38.64 ± 2.54	8.21	7.12 ± 0.02	−11.32	−12.7 ± 0.3	−16.8 ± 0.8	−10.1 ± 0.3	−22.6	−7.2	−10.4
HIP 23309	M0.5 kee	05 00 47.14	−57 15 25.5	36.34 ± 1.42	70.22 ± 1.27	19.40 ± 0.30[p]	37.34 ± 1.13	8.21[p]	7.09 ± 0.02	−11.53	−10.7 ± 0.3	−16.8 ± 0.3	−9.0 ± 0.2	−1.5	−21.2	−16.3
HIP 25486	F7	05 27 04.77	−11 54 03.3	17.55 ± 0.36	−50.23 ± 0.36	21.12 ± 1.64[n]	36.98 ± 0.48	5.67	5.27 ± 0.03	−10.58	−11.9 ± 1.2	−16.3 ± 0.8	−9.2 ± 0.7	−20.4	−13.9	−11.0
HIP 27321	A5V	05 47 17.08	−51 03 59.4	4.65 ± 0.11	83.10 ± 0.15	20.00 ± 3.70[n]	51.44 ± 0.12	3.67	3.67 ± 0.24	…	−11.0 ± 0.6	−16.0 ± 3.1	−9.1 ± 1.9	−3.4	−16.4	−9.9
J0608-2753[a]	M8.5e	06 08 52.83	−27 53 58.3	8.90 ± 3.50[i]	10.70 ± 3.50[i]	24.00 ± 1.00[v]	31.98 ± 3.63[i]	17.10[jj]	13.60 ± 0.03	…	−14.2 ± 0.7	−18.1 ± 0.8	−6.9 ± 0.6	−17.0	−23.7	−11.2
HIP 29964	K4Ve	06 18 28.24	−72 02 41.6	−8.32 ± 0.86	72.02 ± 1.06	16.20 ± 1.00[q]	25.94 ± 0.90	8.48[p]	7.53 ± 0.02	−11.09	−9.9 ± 0.5	−16.2 ± 0.9	−8.8 ± 0.5	7.4	−33.1	−18.2
HIP 50156[a]	M1V	10 14 19.18	+21 04 29.7	−144.06 ± 1.90	−154.79 ± 1.10	5.80 ± 0.80[ff]	43.32 ± 1.80	8.24[kk]	7.07 ± 0.02	−11.50	−10.0 ± 0.5	−20.4 ± 0.8	−7.2 ± 0.8	−11.3	−7.6	18.6
TWA 22AB	M6Ve+M6Ve	10 17 26.89	−53 54 26.5	−175.80 ± 0.80[g]	−21.30 ± 0.80[g]	13.57 ± 0.26[u]	57.00 ± 0.70[g]	10.44[jj]	8.55 ± 0.02	−11.87	−8.2 ± 0.2	−15.9 ± 0.3	−9.0 ± 0.1	3.5	−17.2	0.7
HIP 76629 A	K0V	15 38 57.57	−57 42 27.3	−53.98 ± 1.14	−106.00 ± 1.27	3.60 ± 0.95[n]	25.95 ± 1.14	7.07[p]	6.38 ± 0.02	−10.95	−8.8 ± 0.9	−17.6 ± 0.9	−9.8 ± 0.5	31.1	−22.7	−1.2
HIP 76629 BC	M4.5*	15 38 56.79	−57 42 19.0	−53.98 ± 1.14	−106.00 ± 1.27	0.10 ± 2.00[p]	25.95 ± 1.14	11.90[p]	10.05 ± 0.05	−10.95	−11.6 ± 1.7	−15.6 ± 1.4	−9.7 ± 0.5	31.1	−22.7	−1.2
HIP 79881	A0	16 18 17.89	−28 36 50.2	−31.19 ± 0.26	−100.92 ± 0.18	−13.00 ± 0.50[r]	24.22 ± 0.22	4.81	4.86 ± 0.04	…	−13.6 ± 0.5	−16.1 ± 0.2	−12.3 ± 0.2	39.0	−7.9	11.0
HIP 84586 AB	G5IV+K0IV	17 17 25.50	−66 57 03.9	−21.83 ± 0.39	−136.91 ± 0.42	3.34 ± 1.69[n]	31.80 ± 0.50	6.04	5.29 ± 0.03	−10.42	−10.2 ± 1.3	−16.2 ± 1.0	−8.6 ± 0.5	24.7	−17.4	−8.8
HIP 84586 C	M3Ve	17 17 31.28	−66 57 05.5	−21.83 ± 0.39	−136.91 ± 0.42	2.70 ± 1.80[p]	31.80 ± 0.50	10.09[p]	8.54 ± 0.03	−10.42	−10.7 ± 1.4	−15.8 ± 1.0	−8.4 ± 0.5	24.7	−17.4	−8.8
HIP 86598	F9V	17 41 49.03	−50 43 27.9	−3.70 ± 1.08	−65.70 ± 0.85	2.40 ± 1.10[w]	13.80 ± 0.87	7.68	7.34 ± 0.02	−11.51	−6.2 ± 1.2	−19.2 ± 1.3	−10.5 ± 0.8	67.3	−23.4	−13.4
HIP 88399 A	F5V	18 03 03.41	−51 38 56.4	4.02 ± 0.60	−86.46 ± 0.36	0.50 ± 0.40[o]	20.77 ± 0.56	6.48	6.16 ± 0.02	−11.87	−7.2 ± 0.4	−15.8 ± 0.5	−9.4 ± 0.3	44.3	−14.7	−11.6
HIP 88726 AB	A5V+A5V	18 06 49.90	−43 25 29.7	10.73 ± 1.05	−106.59 ± 0.51	−7.80 ± 0.40[o]	23.90 ± 0.66	4.63	4.68 ± 0.25	…	−12.9 ± 0.4	−15.7 ± 0.5	−9.9 ± 0.4	40.4	−7.5	−7.9
HIP 89829	G5V	18 19 52.21	−29 16 32.7	3.60 ± 1.29	−46.46 ± 0.78	−7.00 ± 2.60[p]	13.78 ± 1.02	7.99	7.53 ± 0.02	−11.27	−7.1 ± 2.6	−14.1 ± 1.1	−7.6 ± 0.8	72.0	4.3	−8.4
HIP 92024 A	A7	18 45 26.91	−64 52 16.5	32.40 ± 0.17	−149.48 ± 0.17	3.80 ± 4.50[o]	35.03 ± 0.19	4.57	4.38 ± 0.26	−12.16	−9.3 ± 3.6	−16.2 ± 2.0	−9.8 ± 1.8	22.8	−12.8	−11.5
HIP 92024 BC	K7V(sb2)	18 45 37.04	−64 51 46.0	30.30 ± 0.01	−153.10 ± 0.01	1.00 ± 3.00[p]	35.03 ± 0.19	8.00[p]	6.91 ± 0.02	−11.08	−11.7 ± 2.4	−15.4 ± 1.4	−8.5 ± 1.2	22.8	−12.8	−11.5
HIP 92680	G9IV	18 53 05.87	−50 10 49.9	17.64 ± 1.13	−83.63 ± 0.76	−4.20 ± 0.20[ff]	19.42 ± 0.98	7.61	6.86 ± 0.02	−11.07	−11.7 ± 0.4	−15.8 ± 0.9	−8.2 ± 0.6	46.8	−11.5	−18.2
HIP 95261 AB[a]	A0Vn+M7	19 22 51.22	−54 25 26.3	25.57 ± 0.21	−82.71 ± 0.14	13.00 ± 2.50[n]	20.74 ± 0.21	4.99	5.10 ± 0.04	…	2.1 ± 2.1	−18.9 ± 0.7	−14.0 ± 1.1	41.3	−12.7	−21.3
HIP 95270	F5.5	19 22 58.94	−54 32 17.0	23.99 ± 0.65	−81.82 ± 0.44	0.20 ± 0.40[n]	19.30 ± 0.65	6.49	6.20 ± 0.02	…	−9.4 ± 0.5	−16.6 ± 0.6	−8.6 ± 0.4	44.4	−13.8	−22.9
HIP 99273	F5V	20 09 05.21	−26 13 26.5	39.17 ± 0.50	−68.25 ± 0.36	−5.80 ± 2.20[n]	19.15 ± 0.45	6.63	6.32 ± 0.02	−12.31	−7.9 ± 1.9	−15.8 ± 0.6	−10.1 ± 1.1	44.4	12.7	−24.4
HIP 102141 B	M4Ve	20 41 51.11	−32 26 07.3	269.30 ± 4.63	−365.70 ± 3.50	−5.13 ± 0.05	93.50 ± 3.67	8.06[p]	6.56 ± 0.03[t]	−10.54	−11.0 ± 0.3	−17.9 ± 0.7	−10.8 ± 0.6	8.5	1.7	−6.3
HIP 102141 A	M4Ve	20 41 51.11	−32 26 07.3	269.30 ± 4.63	−365.70 ± 3.50	−3.73 ± 0.04	93.50 ± 3.67	8.00[p]	6.56 ± 0.03[t]	−10.54	−9.9 ± 0.3	−17.6 ± 0.7	−11.6 ± 0.6	8.5	1.7	−6.3
HIP 102409	M1Ve	20 45 09.49	−31 20 26.6	279.96 ± 1.26	−360.61 ± 0.73	−4.13 ± 0.03	100.91 ± 1.06	6.71	5.44 ± 0.02	−10.33	−9.8 ± 0.1	−16.3 ± 0.2	−10.7 ± 0.1	7.7	1.7	−5.9
HIP 103311	F8V*	20 55 47.67	−17 06 50.9	58.81 ± 0.83	−62.83 ± 0.73	−9.00 ± 3.00[o]	21.90 ± 0.77	6.65	6.21 ± 0.02	−10.87	−10.7 ± 2.1	−15.5 ± 1.3	−8.6 ± 1.8	32.3	18.9	−26.2
HIP 112312 B	M5IVe	22 45 00.04	−33 15 25.8	184.76 ± 2.64	−119.76 ± 2.31	2.03 ± 0.04	42.84 ± 3.61	10.27[p]	8.68 ± 0.02	…	−12.6 ± 1.2	−17.9 ± 1.5	−10.9 ± 0.8	10.7	2.4	−20.6
HIP 112312	M4IVe	22 44 57.94	−33 15 01.5	184.76 ± 2.64	−119.76 ± 2.31	3.09 ± 0.04	42.84 ± 3.61	9.27[p]	7.79 ± 0.02	−11.13	−12.2 ± 1.2	−17.8 ± 1.5	−11.8 ± 0.8	10.7	2.4	−20.6
							TW Hydrae Association									
TWA 1	K6Ve	11 01 51.91	−34 42 17.0	−66.19 ± 1.90	−13.90 ± 1.50	13.40 ± 0.80[p]	18.62 ± 2.14	9.38[p]	8.22 ± 0.02	−11.19	−10.9 ± 1.5	−18.3 ± 1.0	−4.6 ± 1.2	7.5	−48.9	20.9
TWA 4ABCD	K7+M1*	11 22 05.30	−24 46 39.3	−85.40 ± 1.70	−33.10 ± 2.10	9.30 ± 1.00[o]	22.27 ± 2.31	7.78	6.40 ± 0.02	−11.25	−11.3 ± 1.4	−17.3 ± 1.3	−6.3 ± 1.4	5.4	−36.9	25.0
TWA 8A	M3Ve	11 32 41.24	−26 51 55.9	−99.20 ± 6.20[j]	−32.20 ± 6.20[j]	8.68 ± 0.02	21.28 ± 1.00[l]	9.80[l]	8.34 ± 0.02	−11.57	−14.5 ± 1.6	−18.6 ± 1.0	−7.6 ± 1.3	8.2	−38.6	25.4
TWA 8B	M5.5	11 32 41.16	−26 52 09.0	−101.30 ± 6.20[j]	−38.60 ± 6.20[j]	8.61 ± 0.03	21.28 ± 1.00[l]	11.75[l]	9.84 ± 0.02	…	−14.3 ± 1.5	−19.3 ± 1.0	−8.9 ± 1.3	8.2	−38.6	25.4
TWA 26	M9Ve	11 39 51.13	−31 59 21.4	−75.20 ± 4.40[i]	−10.40 ± 4.50[i]	11.60 ± 2.00[z]	35.10 ± 4.30[i]	15.83[jj]	12.69 ± 0.03	…	−5.5 ± 1.3	−14.4 ± 1.8	1.6 ± 1.2	6.8	−24.1	13.6
TWA 19 [a]	G5V	11 47 24.54	−49 53 02.9	−33.34 ± 0.77	−9.91 ± 0.90	14.40 ± 0.40[p]	10.91 ± 1.28	8.41[p]	7.89 ± 0.03	−11.35	−6.0 ± 1.4	−19.4 ± 0.8	−4.7 ± 1.0	34.3	−82.9	18.6
TWA 9B	M1V	11 48 23.73	−37 28 48.5	−53.10 ± 1.90[m]	−20.00 ± 3.40[m]	12.23 ± 0.03[p]	21.38 ± 2.48	11.42[p]	9.98 ± 0.03	…	−4.9 ± 1.1	−16.7 ± 0.8	−1.8 ± 1.0	14.2	−40.4	18.8
TWA 9A	K5V	11 48 24.22	−37 28 49.1	−53.10 ± 1.90[m]	−20.00 ± 3.40[m]	11.65 ± 0.02	21.38 ± 2.48	9.64[p]	8.68 ± 0.03	−11.57	−5.1 ± 1.1	−16.2 ± 0.8	−2.1 ± 1.0	14.2	−40.4	18.8
TWA 27AB	M8Ve*	12 07 33.46	−39 32 53.9	−80.10 ± 17.90[j]	−15.10 ± 17.90[j]	11.20 ± 2.00[z]	18.51 ± 1.03[ii]	15.88[jj]	13.00 ± 0.03	…	−12.5 ± 4.4	−20.0 ± 3.0	−2.7 ± 4.3	20.1	−45.7	20.7
TWA 11A	A0	12 36 01.03	−39 52 10.2	−56.66 ± 0.30	−25.00 ± 0.20	6.90 ± 1.00[o]	13.74 ± 0.33	5.76	5.78 ± 0.02	−12.10	−11.4 ± 0.6	−18.3 ± 0.9	−6.4 ± 0.5	33.2	−58.2	28.3
							Tucana-Horologium Association									
HIP 490	G0V	00 05 52.55	−41 45 10.9	97.53 ± 0.38	−76.27 ± 0.44	2.30 ± 1.50[p]	25.39 ± 0.59	6.84	6.46 ± 0.02	−11.93	−9.4 ± 0.5	−21.2 ± 0.5	−2.0 ± 1.4	10.4	−5.4	−37.6
HIP 1113	G8V	00 13 53.00	−74 41 17.8	83.53 ± 0.78	−47.89 ± 0.75	9.30 ± 0.20[p]	22.52 ± 0.82	7.97	7.41 ± 0.02	−11.38	−8.9 ± 0.5	−20.4 ± 0.6	−1.5 ± 0.2	19.5	−26.5	−29.8
HIP 1481	F8	00 18 26.12	−63 28 38.9	89.37 ± 0.48	−59.46 ± 0.50	7.00 ± 2.00[q]	24.07 ± 0.52	6.85	6.46 ± 0.02	−11.69	−8.8 ± 0.8	−20.4 ± 1.0	−1.0 ± 1.6	15.7	−19.3	−33.3
HIP 1910 AB	M0Ve*	00 24 08.99	−62 11 04.2	90.91 ± 2.37	−47.25 ± 3.04	6.60 ± 0.60[p]	18.88 ± 2.72	9.49	8.39 ± 0.03	…	−13.1 ± 2.3	−23.1 ± 3.0	−1.0 ± 0.9	19.0	−24.0	−43.2
HIP 1993	M0Ve	00 25 14.65	−61 30 48.3	87.76 ± 2.14	−57.48 ± 2.37	6.40 ± 0.10[p]	21.83 ± 2.42	9.69	8.61 ± 0.03	…	−9.6 ± 1.4	−21.6 ± 2.1	−0.2 ± 0.6	16.2	−20.4	−37.7
HIP 2484 AbB[a]	B9V*	00 31 32.67	−62 57 29.7	83.64 ± 0.19	−54.82 ± 0.18	14.00 ± 2.50[r]	24.15 ± 0.20	4.38	4.66 ± 0.25	…	−5.1 ± 0.9	−22.7 ± 1.2	−6.3 ± 2.0	14.6	−19.5	−33.5
HIP 2487 AB	A2V+A7V	00 31 33.47	−62 57 56.0	93.97 ± 2.86	−46.32 ± 2.68	9.80 ± 0.74[gg]	19.36 ± 2.97	4.39	4.32 ± 0.29	…	−12.0 ± 2.5	−24.5 ± 3.1	−3.1 ± 1.0	18.2	−24.3	−41.8
HIP 2578	A0V	00 32 43.91	−63 01 53.3	86.66 ± 0.18	−50.33 ± 0.17	5.00 ± 1.20[r]	21.95 ± 0.19	5.02	5.06 ± 0.04	…	−10.2 ± 0.4	−19.7 ± 0.6	0.9 ± 1.0	16.0	−21.5	−36.8
HIP 2729	K5Ve	00 34 51.20	−61 54 58.3	88.28 ± 0.92	−53.16 ± 0.91	−1.00 ± 2.00[q]	22.76 ± 0.99	8.55	7.34 ± 0.02	−11.41	−11.7 ± 0.9	−17.0 ± 1.2	5.9 ± 1.7	14.9	−20.2	−36.0
HIP 3556[a]	M3	00 45 28.14	−51 37 33.9	95.74 ± 1.92	−58.95 ± 1.87	−1.60 ± 19.99[r]	24.78 ± 2.65	9.73	8.48 ± 0.02	…	−10.5 ± 4.9	−18.0 ± 7.1	5.7 ± 18.2	9.6	−13.7	−36.7
HIP 6485	G6V	01 23 21.26	−57 28 50.7	92.45 ± 0.92	−38.00 ± 0.72	8.30 ± 0.40[r]	20.19 ± 0.83	7.77	7.24 ± 0.02	−11.35	−10.5 ± 0.5	−22.6 ± 0.8	0.0 ± 0.5	10.6	−23.1	−42.5
HIP 6856	K1V	01 28 08.68	−52 38 19.1	106.09 ± 1.02	−42.81 ± 1.24	8.00 ± 0.20[p]	27.76 ± 1.00	8.35	7.41 ± 0.02	−11.41	−8.7 ± 0.4	−19.2 ± 0.6	−1.5 ± 0.3	5.6	−15.0	−32.3
HIP 9141 AB	G3V*	01 57 48.96	−21 54 05.2	105.08 ± 0.72	−50.60 ± 0.54	6.80 ± 0.20[p]	24.45 ± 0.67	7.36	6.86 ± 0.02	−11.76	−10.6 ± 0.3	−21.0 ± 0.6	−2.4 ± 0.2	−10.7	−3.4	−39.3
HIP 9685[a]	F2V	02 04 35.13	−54 52 54.0	75.74 ± 0.45	−25.05 ± 0.48	3.40 ± 3.70[r]	20.94 ± 0.46	6.00	5.70 ± 0.04	…	−8.1 ± 0.5	−15.9 ± 1.9	4.3 ± 3.2	5.2	−23.9	−41.0
HIP 9892 AB	G7V(sb1)	02 07 18.05	−53 11 56.5	86.06 ± 0.58	−22.60 ± 0.65	10.00 ± 0.50[p]	19.63 ± 0.64	7.88	7.35 ± 0.02	−11.25	−10.2 ± 0.4	−21.4 ± 0.6	−0.5 ± 0.5	4.3	−24.8	−44.3
HIP 9902	F8V	02 07 26.11	−59 40 45.9	91.11 ± 0.47	−18.29 ± 0.47	11.10 ± 0.70[p]	22.64 ± 0.45	6.88	6.53 ± 0.02	…	−9.2 ± 0.3	−20.4 ± 0.5	−1.7 ± 0.6	7.1	−24.4	−36.1
HIP 10602	B8IV	02 16 30.59	−51 30 43.7	91.03 ± 0.12	−22.23 ± 0.12	10.30 ± 1.30[r]	21.22 ± 0.12	3.67	4.03 ± 0.30	…	−10.0 ± 0.1	−21.1 ± 0.6	−0.6 ± 1.1	2.1	−22.9	−41.1
HIP 12394	B9Va	02 39 35.38	−68 16 00.8	87.30 ± 0.09	0.09 ± 0.10	6.20 ± 2.20[r]	21.48 ± 0.09	4.19	4.44 ± 0.30	…	−10.8 ± 0.5	−16.8 ± 1.5	3.3 ± 1.6	10.5	−30.7	−33.4

TABLE 3 — *Continued*

Name	Spt	α (J2000.0) hh mm ss.ss	δ (J2000.0) dd mm ss.s	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	v_{rad}[c] (km s^{-1})	π[d] (mas)	I[e] (mag)	J (mag)	X-ray[f] log(f_X)	U (km s^{-1})	V (km s^{-1})	W (km s^{-1})	X (pc)	Y (pc)	Z (pc)
HIP 12925	F8V	02 46 14.62	+05 35 33.3	75.27 ± 1.45	−44.78 ± 0.83	4.30 ± 1.10[cc]	18.41 ± 1.04	7.26	6.86 ± 0.04	−12.02	−10.0 ± 0.9	−20.7 ± 1.2	−1.0 ± 0.8	−36.1	8.0	−39.8
HIP 14551[a]	A5V	03 07 50.83	−27 49 52.0	66.26 ± 0.50	−19.09 ± 0.49	13.80 ± 0.80[cc]	18.30 ± 0.50	6.00	5.89 ± 0.02	…	−11.0 ± 0.4	−19.4 ± 0.5	−3.7 ± 0.7	−20.3	−18.5	−47.2
HIP 14913 ABC	A0V+F7III+F5V	03 12 25.75	−44 25 11.1	81.63 ± 0.55	−4.57 ± 0.98	13.50 ± 2.10[cc]	23.53 ± 0.62	5.41	5.12 ± 0.03	−10.97	−10.2 ± 0.4	−18.5 ± 1.1	−2.7 ± 1.8	−6.5	−22.3	−35.6
HIP 15247	F5	03 16 40.66	−03 31 48.9	78.63 ± 0.67	−43.82 ± 0.71	7.20 ± 3.80[r]	20.31 ± 0.59	6.87	6.46 ± 0.02	−11.45	−9.1 ± 2.5	−20.2 ± 0.6	0.1 ± 2.8	−32.8	−2.9	−36.6
HIP 16853 AB	G2V(sb)	03 36 53.41	−49 57 28.8	89.74 ± 0.75	0.29 ± 0.84	14.40 ± 0.90[r]	23.07 ± 0.73	6.96	6.49 ± 0.03	−11.73	−10.2 ± 0.3	−21.1 ± 0.7	−0.4 ± 0.8	−4.6	−26.8	−33.8
HIP 17764	F3V	03 48 11.48	−74 41 38.8	63.46 ± 0.39	24.86 ± 0.49	15.50 ± 1.30[cc]	18.50 ± 0.40	6.67	6.37 ± 0.02	−12.80	−8.4 ± 0.5	−21.7 ± 1.0	−2.5 ± 0.8	14.3	−40.4	−32.9
HIP 17782 AB[a]	G8V*	03 48 23.01	+52 02 16.3	61.87 ± 1.98	−70.99 ± 1.67	−2.20 ± 0.60[cc]	19.35 ± 1.62	7.93	7.22 ± 0.02	−11.15	−9.9 ± 1.1	−20.5 ± 1.7	−4.1 ± 0.6	−44.0	27.1	−1.7
HIP 17797	A1V	03 48 35.87	−37 37 12.6	74.44 ± 0.71	−9.09 ± 0.87	15.60 ± 0.40[cc]	19.71 ± 0.86	4.32	3.90 ± 1.05	…	−10.6 ± 0.3	−21.3 ± 0.6	−1.0 ± 0.6	−15.7	−27.4	−39.7
HIP 18714 AB	G3V*	04 00 31.98	−41 44 54.4	69.46 ± 0.81	−7.00 ± 0.85	16.30 ± 0.70[w]	20.62 ± 0.71	7.68	7.20 ± 0.02	…	−9.1 ± 0.3	−20.9 ± 0.6	−1.8 ± 0.7	−12.8	−29.2	−36.6
HIP 21632	G3V	04 38 43.93	−27 02 01.8	56.03 ± 0.51	−11.08 ± 0.72	18.80 ± 0.00[p]	17.80 ± 0.89	7.79	7.27 ± 0.02	−11.58	−11.3 ± 0.2	−21.3 ± 0.6	−1.5 ± 0.5	−29.6	−31.4	−36.0
HIP 21965	F2V	04 43 17.20	−23 37 41.9	50.25 ± 0.69	−11.84 ± 0.78	19.30 ± 2.90[o]	15.73 ± 0.98	6.64	6.29 ± 0.02	−11.79	−11.9 ± 1.7	−21.7 ± 1.7	−1.3 ± 1.9	−36.8	−34.0	−39.1
HIP 22295	F7V	04 48 05.18	−80 46 45.2	46.66 ± 0.49	41.30 ± 0.56	11.50 ± 2.00[r]	16.39 ± 0.51	7.53	7.17 ± 0.02	−11.71	−9.9 ± 0.8	−18.9 ± 1.6	−0.2 ± 1.1	20.9	−47.6	−31.9
HIP 24947	F6V	05 20 38.03	−39 45 17.9	38.36 ± 0.29	13.06 ± 0.50	15.20 ± 1.60[r]	20.70 ± 0.41	6.81	6.42 ± 0.02	−11.34	−9.1 ± 0.6	−15.3 ± 1.2	−0.8 ± 0.9	−17.4	−36.2	−26.8
HIP 32435	F5V	06 46 13.48	−83 59 29.4	19.66 ± 0.43	61.60 ± 0.47	12.50 ± 0.70[r]	17.85 ± 0.36	6.93	6.55 ± 0.03	−11.98	−8.5 ± 0.4	−19.5 ± 0.6	−0.6 ± 0.4	22.0	−44.8	−25.5
HIP 83494[a]	A5V	17 03 53.58	+34 47 24.7	−60.92 ± 0.26	−5.05 ± 0.34	−21.50 ± 1.40[cc]	18.19 ± 0.31	5.86	5.65 ± 0.02	…	−10.6 ± 0.6	−24.6 ± 1.0	−0.3 ± 0.9	23.7	37.5	32.5
HIP 84642 AB[a]	G8V+M5V	17 18 14.64	−60 27 27.5	−54.62 ± 1.09	−91.04 ± 0.84	1.30 ± 0.70[cc]	16.97 ± 1.34	8.71	8.01 ± 0.02	−11.69	−13.6 ± 1.3	−26.3 ± 2.1	−1.3 ± 0.3	50.1	−28.2	−13.1
HIP 100751	B2IV	20 25 38.86	−56 44 06.2	6.90 ± 0.44	−86.02 ± 0.32	2.00 ± 2.50[r]	18.24 ± 0.52	2.04	2.30 ± 0.31	…	−6.1 ± 1.9	−21.6 ± 0.9	−1.6 ± 1.4	42.3	−14.7	−31.6
HIP 104308[a]	A5V	21 07 51.24	−54 12 59.4	26.07 ± 0.50	−80.75 ± 0.35	−10.00 ± 10.00[bb]	14.11 ± 0.44	6.41	6.21 ± 0.02	…	−17.7 ± 7.2	−24.2 ± 2.3	3.9 ± 6.6	50.9	−15.4	−46.9
HIP 105388	G7V	21 20 49.94	−53 02 03.0	28.77 ± 1.01	−94.19 ± 0.55	0.10 ± 0.20[r]	23.27 ± 0.98	7.90	7.39 ± 0.02	−11.33	−6.4 ± 0.3	−19.0 ± 0.8	−1.2 ± 0.2	30.0	−8.5	−29.6
HIP 105404 AB[a]	G9V(eb)	21 20 59.80	−52 28 40.0	25.45 ± 1.69	−103.88 ± 0.73	6.00 ± 2.00[q]	22.15 ± 1.40	8.02	7.18 ± 0.03	−11.21	−2.2 ± 1.5	−23.1 ± 1.4	−4.6 ± 1.4	31.5	−8.5	−31.2
HIP 107345	M1	21 44 30.12	−60 58 38.9	39.98 ± 2.35	−91.66 ± 1.56	2.30 ± 0.50[p]	22.91 ± 2.58	9.88	8.75 ± 0.03	−11.99	−7.7 ± 1.1	−19.3 ± 2.1	−1.0 ± 0.5	27.8	−14.6	−30.3
HIP 107947	F6V	21 52 09.73	−62 03 08.5	44.05 ± 0.41	−92.02 ± 0.45	1.40 ± 0.60[r]	22.06 ± 0.66	6.64	6.36 ± 0.03	−11.45	−9.2 ± 0.5	−19.9 ± 0.6	−0.1 ± 0.4	28.2	−16.0	−31.7
HIP 108195 ABC	F3+F3+M6-7	21 55 11.40	−61 53 11.9	44.50 ± 0.23	−91.07 ± 0.27	1.00 ± 3.00[r]	21.52 ± 0.41	5.46	5.24 ± 0.04	−11.82	−9.6 ± 1.9	−20.2 ± 1.1	0.2 ± 2.1	28.7	−16.3	−32.7
HIP 108422 AB	G8V*	21 57 51.46	−68 12 50.1	41.73 ± 0.87	−85.79 ± 0.94	1.10 ± 2.10[p]	17.23 ± 1.06	8.09	7.31 ± 0.03	−11.17	−12.8 ± 1.5	−22.8 ± 1.7	2.4 ± 1.4	34.6	−26.2	−38.5
HIP 116748 AB	G5V+K3V	23 39 39.49	−69 11 44.8	79.30 ± 0.80	−67.62 ± 0.78	8.00 ± 0.80[p]	21.89 ± 0.84	7.35	7.12 ± 0.02	−11.16	−9.1 ± 0.6	−22.1 ± 0.8	−1.3 ± 0.6	21.0	−23.3	−33.2
HIP 118121	A1V	23 57 35.07	−64 17 53.6	79.12 ± 0.47	−60.80 ± 0.46	0.57 ± 0.82[aa]	21.08 ± 0.49	4.93	4.91 ± 0.04	…	−11.9 ± 0.5	−18.7 ± 0.6	3.8 ± 0.7	19.7	−21.7	−37.3
Columba Association																
HIP 1134	F5V	00 14 10.25	−07 11 56.9	102.79 ± 0.78	−66.36 ± 0.36	−2.20 ± 1.20[cc]	21.21 ± 0.64	6.73	6.40 ± 0.02	−11.72	−12.5 ± 0.4	−23.6 ± 0.8	−6.3 ± 1.1	−2.2	17.4	−43.8
HIP 12413 A [a]	A1V	02 39 47.96	−42 53 30.0	88.20 ± 2.02	−17.82 ± 1.98	18.00 ± 4.20[cc]	28.02 ± 2.19	4.65	4.68 ± 0.27	−11.45	−9.2 ± 0.8	−19.6 ± 2.1	−9.4 ± 3.8	−4.0	−15.7	−31.8
HIP 16449	A3V	03 31 53.64	−25 36 50.9	53.90 ± 0.31	−14.90 ± 0.45	17.30 ± 0.80[r]	13.90 ± 0.55	6.25	6.16 ± 0.02	…	−12.8 ± 0.4	−22.0 ± 0.7	−4.1 ± 0.8	−32.3	−27.0	−58.3
HIP 17248	M0.5V	03 41 37.24	+55 13 06.8	96.17 ± 2.49	−117.69 ± 2.26	−3.20 ± 0.60[cc]	28.40 ± 2.18	9.60	8.35 ± 0.03	−11.97	−11.3 ± 1.2	−22.1 ± 1.6	−6.0 ± 0.6	−29.1	19.9	0.0
HIP 19775	G3V	04 14 22.57	−38 19 01.6	39.70 ± 0.80[m]	3.70 ± 0.80[m]	20.80 ± 0.30[p]	12.42 ± 0.97	8.45	7.94 ± 0.03	−11.64	−13.3 ± 0.6	−21.6 ± 0.8	−4.6 ± 0.9	−26.8	−48.6	−58.3
HIP 22226	F3V	04 46 49.50	−26 18 08.7	34.52 ± 0.39	−4.13 ± 0.66	21.30 ± 2.50[s]	12.46 ± 0.71	7.39	7.10 ± 0.02	…	−13.2 ± 1.4	−21.0 ± 1.5	−3.4 ± 1.6	−43.7	−45.8	−49.3
HIP 23179	A1V	04 59 15.43	+37 53 25.1	46.35 ± 0.63	−97.80 ± 0.41	7.70 ± 2.50[cc]	19.13 ± 0.79	4.87	4.90 ± 0.47	−11.24	−13.0 ± 2.4	−23.9 ± 1.2	−6.3 ± 0.3	−50.9	11.6	−2.6
HIP 23316	G5V	05 00 51.86	−41 01 06.5	31.76 ± 0.63	10.74 ± 0.90	23.50 ± 0.00[p]	13.10 ± 0.78	8.79	8.13 ± 0.02	…	−13.3 ± 0.5	−22.3 ± 0.4	−5.0 ± 0.6	−25.2	−54.9	−46.6
HIP 23362	B9V	05 01 25.58	−20 03 06.7	36.43 ± 0.19	−16.46 ± 0.22	24.20 ± 2.80[cc]	16.48 ± 0.25	4.95	5.01 ± 0.04	…	−13.7 ± 1.8	−22.2 ± 1.5	−6.2 ± 1.5	−38.9	−33.0	−32.9
HIP 24947	F6V	05 20 38.03	−39 45 17.9	38.36 ± 0.29	13.06 ± 0.50	23.90 ± 2.20[o]	20.70 ± 0.41	6.81	6.42 ± 0.02	−11.34	−12.2 ± 0.8	−21.8 ± 1.7	−5.7 ± 1.2	−17.4	−36.2	−26.8
HIP 25709 AB	G3V(sb2)	05 29 24.09	−34 30 55.4	25.80 ± 0.80[m]	5.70 ± 0.70[m]	24.10 ± 5.00[ff]	14.11 ± 0.57	7.76	7.31 ± 0.02	−12.32	−13.0 ± 2.2	−21.6 ± 3.7	−4.8 ± 2.6	−31.5	−51.9	−36.5
HIP 26309	A2V	05 36 10.29	−28 42 28.9	25.80 ± 0.31	−3.04 ± 0.46	22.40 ± 1.20[cc]	18.94 ± 0.43	6.10	5.96 ± 0.02	…	−11.6 ± 0.6	−19.5 ± 0.8	−5.3 ± 0.6	−28.2	−37.1	−24.9
HIP 26453	F3V	05 37 39.62	−28 37 34.6	24.29 ± 0.44	−4.06 ± 0.74	23.50 ± 0.40[cc]	17.61 ± 0.62	6.79	6.47 ± 0.02	−11.94	−11.9 ± 0.3	−20.6 ± 0.3	−5.7 ± 0.3	−30.4	−40.0	−26.4
HIP 26966	A0V	05 43 21.66	−18 33 26.8	18.92 ± 0.36	−13.99 ± 0.30	25.20 ± 0.60[r]	13.32 ± 0.42	5.72	5.79 ± 0.02	…	−13.4 ± 0.4	−22.1 ± 0.4	−5.9 ± 0.3	−50.7	−46.9	−29.4
HIP 26990	G0V	05 43 35.80	−39 55 24.6	25.82 ± 0.32	15.08 ± 0.52	22.80 ± 0.60[cc]	18.06 ± 0.45	7.48	7.06 ± 0.02	−11.83	−12.0 ± 0.3	−20.4 ± 0.5	−4.7 ± 0.3	−20.0	−43.9	−27.2
HIP 28036	F7V	05 55 43.14	−38 06 16.2	20.49 ± 0.44	9.34 ± 0.44	24.70 ± 0.80[o]	18.39 ± 0.44	6.90	6.49 ± 0.02	−11.71	−11.6 ± 0.3	−21.7 ± 0.6	−6.0 ± 0.4	−21.2	−43.7	−24.5
HIP 28474	G8V	06 00 41.30	−44 53 50.0	18.02 ± 0.59	23.85 ± 0.75	23.80 ± 0.40[cc]	19.03 ± 0.60	8.33	7.73 ± 0.02	−12.56	−12.0 ± 0.3	−21.0 ± 0.3	−6.0 ± 0.3	−14.6	−44.3	−24.2
HIP 30030 [a]	G0V	06 19 08.05	−03 26 20.3	10.90 ± 0.75	−42.62 ± 0.61	19.10 ± 2.40[q]	20.31 ± 0.81	7.29	6.85 ± 0.02	−11.38	−10.3 ± 2.0	−18.4 ± 1.3	−5.1 ± 0.4	−41.1	−26.0	−7.5
HIP 32104	A2V	06 42 24.31	+17 38 43.0	7.87 ± 0.66	−84.32 ± 0.48	15.00 ± 4.20[cc]	22.92 ± 0.67	5.14	5.03 ± 0.04	−12.24	−10.4 ± 4.0	−20.0 ± 1.3	−4.7 ± 0.5	−41.7	−12.1	4.6
HIP 114189	A5V	23 07 28.69	+21 08 03.3	107.93 ± 0.60	−49.63 ± 0.46	−12.60 ± 1.40[cc]	25.38 ± 0.70	5.68	5.38 ± 0.03	−13.11	−12.2 ± 0.4	−21.2 ± 1.2	−7.1 ± 0.9	−1.5	32.0	−22.9
HIP 116805	B9V	23 40 24.49	+44 20 02.1	80.73 ± 0.14	−18.70 ± 0.15	−12.70 ± 0.60[cc]	19.37 ± 0.19	4.75	4.62 ± 0.26	…	−11.5 ± 0.2	−20.1 ± 0.5	−5.9 ± 0.2	−16.7	46.5	−14.8
Carina Association																
HIP 30034 A [a]	K1Ve	06 19 12.91	−58 03 15.6	14.36 ± 0.74	44.66 ± 0.84	22.60 ± 0.30[p]	21.71 ± 0.69	8.23	7.58 ± 0.02	−11.40	−10.3 ± 0.3	−21.7 ± 0.3	−6.2 ± 0.2	−2.2	−41.0	−20.9
HIP 32235	G6V	06 43 46.25	−71 58 35.6	6.17 ± 0.80	61.15 ± 0.87	20.70 ± 0.10[p]	17.17 ± 0.72	8.18	7.69 ± 0.03	−11.95	−11.7 ± 0.7	−23.4 ± 0.3	−5.7 ± 0.2	11.5	−50.9	−25.8
HIP 33737	K2V	07 00 30.46	−79 41 45.9	1.56 ± 0.94	59.94 ± 1.00	17.60 ± 0.10[p]	17.00 ± 0.89	9.16	8.27 ± 0.02	−11.81	−9.2 ± 0.8	−21.8 ± 0.4	−5.5 ± 0.3	19.3	−49.1	−26.0
HIP 46063	K1Ve	09 23 34.98	−61 11 35.9	−28.30 ± 0.99	17.98 ± 1.04	20.80 ± 0.40[p]	11.36 ± 1.14	9.12	8.56 ± 0.03	−11.80	−9.8 ± 1.4	−22.3 ± 0.5	−5.8 ± 0.5	15.8	−85.8	−11.9
HIP 46720 AB	F0V+F2V	09 31 25.00	−73 44 49.6	−35.40 ± 0.45	32.44 ± 0.48	18.30 ± 0.00[p]	11.98 ± 0.51	6.86	6.47 ± 0.02	−11.35	−11.9 ± 0.8	−22.8 ± 0.3	−5.9 ± 0.2	27.5	−75.3	−23.2
Argus Association																
HIP 4448 AB [a]	K3Ve+K4Ve	00 56 55.46	−51 52 31.9	95.93 ± 1.57	10.23 ± 1.35	1.60 ± 0.50[p]	24.61 ± 1.64	7.92	7.04 ± 0.03	−11.21	−16.1 ± 1.1	−9.3 ± 0.7	−1.9 ± 0.5	8.7	−14.6	−36.9
AP COL	M5	06 04 52.15	−34 33 36.0	27.33 ± 0.35[k]	340.92 ± 0.35[k]	22.40 ± 0.30[k]	119.21 ± 0.98[k]	9.74[k]	7.74 ± 0.03	−11.43	−22.0 ± 0.2	−13.6 ± 0.2	−4.5 ± 0.1	−3.7	−6.7	−3.4
HIP 36948	G8Vk	07 35 47.47	−32 12 14.1	−55.71 ± 0.59	74.58 ± 0.62	22.57 ± 0.18[gg]	28.29 ± 0.85	7.45	6.91 ± 0.03	…	−23.1 ± 0.4	−14.2 ± 0.3	−4.4 ± 0.1	−14.1	−32.2	−3.5
HIP 47135	G1	09 36 17.83	−78 20 41.7	−74.85 ± 0.59	50.62 ± 0.59	5.20 ± 0.10[dd]	14.71 ± 0.60	7.93	7.47 ± 0.03	−12.33	−24.9 ± 1.1	−14.3 ± 0.4	−7.0 ± 0.3	25.8	−58.8	−22.3
HIP 50191	A2V	10 14 44.16	−42 07 18.9	−150.09 ± 0.10	49.44 ± 0.11	7.40 ± 2.70[cc]	32.18 ± 0.15	3.82	3.86 ± 0.26	…	−21.6 ± 0.2	−10.3 ± 2.6	−5.1 ± 0.6	2.3	−30.3	6.4
HIP 57632 [a]	A3V	11 49 03.66	+14 34 19.7	−497.68 ± 0.87	−114.67 ± 0.44	−0.20 ± 0.50[cc]	90.91 ± 0.52	2.04	1.85 ± 0.27	…	−19.9 ± 0.1	−16.0 ± 0.2	−7.7 ± 0.5	−1.2	−3.4	10.4
HIP 68994	F4V	14 07 29.29	−61 33 44.1	−69.88 ± 0.79	−29.87 ± 0.60	−5.20 ± 1.00[cc]	15.59 ± 0.81	7.25	6.97 ± 0.02	…	−20.6 ± 1.1	−11.5 ± 1.1	−2.5 ± 0.2	42.8	−47.8	−0.0
HIP 74405	G9V	15 12 23.43	−75 15 15.6	−73.87 ± 0.87	−73.08 ± 0.92	−3.50 ± 0.10[p]	19.88 ± 1.06	8.56	7.84 ± 0.03	−11.64	−21.2 ± 1.0	−12.5 ± 0.8	−4.3 ± 0.3	32.3	−36.3	−12.9
HIP 79797	A4V	16 17 05.40	−67 56 28.5	−45.99 ± 0.28	−84.00 ± 0.35	−9.00 ± 4.30[cc]	19.15 ± 0.42	5.77	5.77 ± 0.03	…	−22.4 ± 3.3	−11.1 ± 2.7	−4.4 ± 0.9	39.3	−32.5	−11.2
HIP 98495	A0V	20 00 35.58	−72 54 38.0	81.78 ± 0.11	−132.16 ± 0.14	−6.70 ± 0.70[cc]	31.04 ± 0.17	4.01	3.80 ± 0.25	…	−21.8 ± 0.5	−10.6 ± 0.4	−4.8 ± 0.4	21.8	−17.0	−16.5
HIP 99770	A2V	20 14 32.03	+36 48 22.5	69.81 ± 0.19	69.14 ± 0.20	−17.30 ± 2.80[cc]	23.42 ± 0.22	4.72	4.89 ± 0.31	…	−23.4 ± 0.8	−11.4 ± 2.7	−4.4 ± 0.1	11.4	41.1	0.9
AB Doradus Moving Group																
HIP 3589 AB	F8V*	00 45 50.88	+54 58 40.2	96.81 ± 0.65	−74.17 ± 0.53	−14.80 ± 1.70[r]	19.04 ± 0.89	7.04	6.64 ± 0.02	−11.59	−10.9 ± 1.3	−27.2 ± 1.6	−16.8 ± 0.9	−27.7	44.1	−7.2
HIP 5191 AB	K1V*	01 06 26.14	−14 17 46.8	99.29 ± 1.23	−94.93 ± 0.74	6.00 ± 1.20[ee]	21.12 ± 1.23	8.55	7.91 ± 0.02	−12.05	−7.8 ± 0.5	−29.0 ± 1.8	−9.3 ± 1.2	−8.2	7.2	−46.1
HIP 6276	G0V	01 20 32.26	−11 28 03.5	110.59 ± 0.92	−138.43 ± 0.69	8.26 ± 0.44[hh]	29.07 ± 1.01	7.60	7.03 ± 0.02	−12.20	−4.2 ± 0.2	−27.2 ± 1.0	−12.0 ± 0.4	−8.6	5.4	−32.9

TABLE 3 — *Continued*

Name	Spt	α (J2000.0) hh mm ss.ss	δ (J2000.0) dd mm ss.s	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	v_{rad}[c] (km s^{-1})	π[d] (mas)	I[e] (mag)	J (mag)	X-ray[f] $\log(f_X)$	U (km s^{-1})	V (km s^{-1})	W (km s^{-1})	X (pc)	Y (pc)	Z (pc)
HIP 10272 AB	K1V*	02 12 15.35	+23 57 29.8	125.44 ± 1.45	−161.47 ± 0.98	−0.30 ± 0.20[r]	27.30 ± 1.19	6.49	6.20 ± 0.02	−11.84	−8.6 ± 0.4	−31.3 ± 1.4	−14.3 ± 0.7	−24.7	16.8	−21.2
HIP 12635	K3.5V	02 42 20.94	+38 37 21.2	75.73 ± 2.49	−111.45 ± 2.73	−4.10 ± 0.30[ee]	19.83 ± 2.62	9.32	8.38 ± 0.02	−11.97	−8.2 ± 1.6	−28.2 ± 3.5	−13.7 ± 2.1	−39.3	26.9	−16.7
HIP 12638	G5V	02 42 21.30	+38 37 07.3	79.20 ± 2.24	−107.49 ± 2.39	−4.20 ± 0.20[r]	22.00 ± 2.35	7.93	7.43 ± 0.02	−11.97	−7.5 ± 1.2	−25.8 ± 2.6	−11.2 ± 1.4	−35.4	24.2	−15.0
HIP 13027 AB	G0V+G5V	02 47 27.38	+19 22 19.2	117.91 ± 0.89	−161.81 ± 0.71	3.70 ± 0.30[r]	29.80 ± 0.82	6.16	5.87 ± 0.02	−11.63	−7.9 ± 0.3	−28.8 ± 0.8	−11.8 ± 0.3	−25.1	10.6	−19.6
HIP 13209	B8V	02 49 59.02	+27 15 38.1	66.81 ± 0.24	−116.52 ± 0.15	4.00 ± 4.10[cc]	19.69 ± 0.19	3.69	3.66 ± 0.29	…	−8.9 ± 3.2	−26.9 ± 1.7	−16.1 ± 2.0	−39.7	20.3	−24.3
HIP 14684	G0V	03 09 42.27	−09 34 46.3	91.01 ± 1.30	−112.21 ± 1.30	14.60 ± 0.70[q]	26.73 ± 1.12	7.64	7.16 ± 0.03	…	−5.8 ± 0.5	−27.1 ± 1.1	−10.0 ± 0.6	−22.1	−4.4	−29.9
HIP 14809	G5V	03 11 13.83	+22 24 57.1	54.04 ± 1.36	−126.09 ± 1.32	5.20 ± 0.20[ee]	18.62 ± 1.13	7.85	7.27 ± 0.02	−11.91	−5.8 ± 0.3	−29.8 ± 1.9	−18.0 ± 1.0	−43.9	15.4	−26.9
HIP 15353	A3V	03 17 59.07	−66 55 36.7	56.94 ± 0.30	12.68 ± 0.40	26.00 ± 0.50[cc]	18.20 ± 0.30	5.88	5.78 ± 0.02	…	−6.1 ± 0.2	−27.0 ± 0.4	−11.9 ± 0.4	9.4	−38.1	−38.4
HIP 16563 AB	G5V*M0V	03 33 13.47	+46 15 26.9	68.46 ± 0.96	−176.81 ± 0.76	−6.00 ± 0.30[ee]	29.08 ± 1.02	7.34	6.84 ± 0.02	−11.06	−5.8 ± 0.5	−26.5 ± 0.8	−15.9 ± 0.6	−29.5	17.1	−4.8
HIP 17695	M2.5V kee	03 47 23.33	−01 58 19.5	185.53 ± 3.77	−273.48 ± 3.95	16.00 ± 1.70[ee]	62.00 ± 2.88	9.11[kk]	7.80 ± 0.03	−11.49	−7.4 ± 1.3	−26.9 ± 1.2	−10.8 ± 1.1	−12.0	−2.1	−10.6
HIP 18859	F5V	04 02 36.75	−00 16 07.8	149.04 ± 0.42	−253.03 ± 0.43	17.60 ± 0.20[r]	53.10 ± 0.32	4.80	4.71 ± 0.24	−10.91	−7.9 ± 0.2	−28.1 ± 0.2	−12.0 ± 0.1	−14.8	−2.8	−11.3
HIP 19183	F5V	04 06 41.53	+01 41 02.0	37.08 ± 1.43	−94.59 ± 1.34	15.90 ± 1.30[r]	18.12 ± 0.92	7.28	6.89 ± 0.03	−12.18	−5.0 ± 1.1	−27.0 ± 1.3	−14.3 ± 0.8	−44.6	−7.5	−31.6
HIP 22738 A	M3Ve	04 53 31.19	−55 51 37.2	134.53 ± 2.39	72.68 ± 2.03	29.00 ± 0.00[p]	90.02 ± 1.98	8.58[p]	7.20 ± 0.03	−11.11	−7.4 ± 0.2	−26.1 ± 0.1	−13.0 ± 0.1	−0.9	−8.6	−6.9
HIP 22738 B	M3Ve	04 53 30.54	−55 51 31.8	134.53 ± 2.39	72.68 ± 2.03	30.00 ± 0.00[p]	90.02 ± 1.98	9.29[p]	7.80 ± 0.02	−11.11	−7.5 ± 0.2	−26.9 ± 0.1	−13.6 ± 0.1	−0.9	−8.6	−6.9
HIP 25283 AB	K6 ke*	05 24 30.16	−38 58 10.6	44.25 ± 0.67	−59.51 ± 1.13	31.70 ± 0.20[r]	55.55 ± 0.92	7.87	6.70 ± 0.02	−11.57	−7.4 ± 0.1	−27.7 ± 0.2	−14.8 ± 0.1	−6.7	−13.5	−9.8
HIP 25647 ABCD	K1(sb4)	05 28 44.84	−65 26 55.1	33.16 ± 0.39	150.83 ± 0.73	33.00 ± 0.30[ee]	65.93 ± 0.57	5.94	5.32 ± 0.02	−10.24	−8.4 ± 0.1	−29.2 ± 0.3	−17.1 ± 0.2	1.2	−12.7	−8.3
HIP 26369	K7V	05 36 55.09	−47 57 48.1	12.64 ± 10.36	24.53 ± 10.04	31.10 ± 1.10[ee]	39.01 ± 7.34	8.38[kk]	7.45 ± 0.03	−10.93	−10.0 ± 1.3	−25.6 ± 1.2	−14.9 ± 1.3	−5.8	−21.0	−13.6
HIP 26373	K0V	05 36 56.85	−47 57 52.8	25.40 ± 1.65	−3.38 ± 1.45	32.20 ± 0.20[r]	39.82 ± 1.36	7.09	6.37 ± 0.02	−10.93	−7.0 ± 0.2	−28.0 ± 0.2	−14.5 ± 0.2	−5.7	−20.5	−13.3
HIP 26401 AB	G7V+K1V	05 37 12.92	−42 42 55.6	11.01 ± 1.36	−15.02 ± 2.04	31.80 ± 0.00[p]	13.05 ± 1.51	8.52	8.08 ± 0.03	−11.97	−4.9 ± 0.9	−29.0 ± 0.5	−13.9 ± 0.5	−24.1	−61.0	−39.6
HIP 30314 AB	G1V*	06 22 30.97	−60 13 07.2	−11.29 ± 0.35	64.24 ± 0.30	31.20 ± 0.20[r]	42.05 ± 0.27	5.87	5.43 ± 0.04	−11.33	−7.6 ± 0.1	−27.7 ± 0.2	−14.3 ± 0.1	−0.2	−21.2	−10.7
HIP 31711 AB	G1.5V*	06 38 00.36	−61 32 00.1	−47.84 ± 1.04	72.73 ± 0.87	33.40 ± 1.00[ee]	46.96 ± 0.81	5.46	5.08 ± 0.27	−10.76	−7.5 ± 0.2	−29.0 ± 0.9	−17.2 ± 0.4	0.4	−19.3	−9.1
HIP 31878	K7V	06 39 50.03	−61 28 41.7	−27.92 ± 1.00	75.34 ± 1.13	30.50 ± 0.70[ee]	44.74 ± 0.91	8.18	7.30 ± 0.02	−11.94	−7.8 ± 0.2	−27.3 ± 0.6	−14.1 ± 0.3	0.4	−20.3	−9.4
HIP 36349 AB	M3V*	07 28 51.37	−30 14 49.0	−130.08 ± 1.36	−131.55 ± 1.73	26.60 ± 1.00[ee]	63.72 ± 1.76	8.18	6.61 ± 0.02	−10.88	−7.3 ± 0.5	−24.3 ± 0.9	−15.9 ± 0.4	−6.9	−14.0	−1.6
HIP 51317	M2V	10 28 55.55	+00 50 27.5	−603.75 ± 1.90	−728.94 ± 2.04	8.30 ± 0.50[ff]	141.50 ± 0.53	7.39	6.18 ± 0.02	−12.95	−7.5 ± 0.2	−28.0 ± 0.3	−15.3 ± 0.4	−2.1	−4.4	5.2
HIP 63742 AB	G5V*	13 03 49.67	−05 09 42.3	−191.13 ± 0.86	−218.73 ± 0.68	2.00 ± 0.50[ee]	46.10 ± 0.81	6.80	6.05 ± 0.02	−11.83	−5.3 ± 0.2	−27.9 ± 0.5	−9.4 ± 0.5	7.3	−9.1	18.3
HIP 76768 AB	K3V+K4V	15 40 28.40	−18 41 46.0	−70.13 ± 3.32	−159.81 ± 2.39	−8.90 ± 0.40[ee]	24.88 ± 2.69	8.75	7.73 ± 0.03	−11.44	−7.1 ± 0.5	−29.7 ± 3.4	−15.8 ± 1.4	34.7	−6.5	19.2
HIP 81084	M0.5V	16 33 41.61	−09 33 11.6	−70.05 ± 2.75	−177.52 ± 2.29	−15.00 ± 0.40[ee]	32.60 ± 2.47	9.53	8.38 ± 0.02	−12.07	−7.5 ± 0.6	−27.9 ± 2.0	−12.6 ± 0.6	27.6	3.2	12.9
HIP 82688	G0V	16 54 08.15	−04 20 24.8	−37.25 ± 1.01	−114.05 ± 0.73	−16.50 ± 0.40[r]	21.40 ± 0.92	7.16	6.70 ± 0.02	−11.89	−5.7 ± 0.5	−28.1 ± 1.1	−12.5 ± 0.4	41.5	10.7	18.7
HIP 86346 AB	M0V*	17 38 39.64	+61 14 16.0	−23.30 ± 2.03	47.71 ± 2.20	−26.70 ± 0.10[q]	30.19 ± 2.00	8.99[mm]	7.62 ± 0.02	−11.32	−7.5 ± 0.6	−24.4 ± 0.2	−11.3 ± 0.3	−0.1	28.0	17.7
HIP 93580[a]	A4V	19 03 32.24	+01 49 07.6	22.63 ± 0.26	−68.50 ± 0.20	−23.10 ± 2.30[cc]	18.22 ± 0.31	5.62	5.46 ± 0.02	−12.15	−11.3 ± 1.9	−24.5 ± 1.4	−12.6 ± 0.2	44.4	32.2	−1.8
HIP 94235 AB	G1V*	19 10 57.82	−60 16 20.2	12.51 ± 0.79	−100.15 ± 0.68	8.70 ± 0.30[ff]	16.30 ± 0.77	7.62	7.20 ± 0.02	−11.88	−7.6 ± 0.8	−27.3 ± 1.2	−11.7 ± 0.4	50.6	−22.3	−26.6
HIP 95347	B8V	19 23 53.15	−40 36 57.1	30.49 ± 0.35	−119.21 ± 0.18	−0.70 ± 4.10[cc]	17.94 ± 0.22	4.06	4.17 ± 0.25	−12.05	−8.3 ± 3.8	−27.5 ± 0.4	−15.2 ± 1.6	51.2	−2.0	−21.9
HIP 106231	K8V	21 31 01.71	+23 20 07.4	133.38 ± 0.97	−145.24 ± 0.90	−17.40 ± 1.00[q]	40.32 ± 1.06	8.13	7.07 ± 0.02	−11.16	−5.0 ± 0.3	−23.8 ± 0.9	−15.7 ± 0.7	6.3	22.4	−8.5
HIP 109268	B6V	22 08 13.97	−46 57 39.3	126.69 ± 0.14	−147.47 ± 0.14	10.90 ± 1.70[cc]	32.29 ± 0.21	1.78	2.02 ± 0.35	…	−6.9 ± 1.0	−25.4 ± 0.2	−15.5 ± 1.3	18.6	−3.3	−24.6
HIP 110526 AB	M3V*	22 23 29.04	+32 27 33.4	251.31 ± 5.54	−212.28 ± 11.32	−20.60 ± 2.10[ee]	64.47 ± 6.49	8.58	6.90 ± 0.02	−11.04	−6.2 ± 0.9	−27.6 ± 2.1	−14.5 ± 2.4	−0.0	14.5	−5.5
HIP 113579	G3V	23 00 19.29	−26 09 13.5	110.02 ± 0.83	−160.09 ± 0.56	6.10 ± 0.20[r]	32.51 ± 0.71	6.75	6.29 ± 0.02	−11.68	−3.2 ± 0.2	−25.4 ± 0.6	−13.6 ± 0.3	11.3	6.2	−27.9
HIP 113597 AB	K8V*	23 00 27.91	−26 18 43.1	113.54 ± 2.13	−162.04 ± 1.52	8.40 ± 1.50[ee]	32.74 ± 2.03	7.98	7.05 ± 0.02	−11.68	−2.6 ± 0.7	−25.2 ± 1.7	−15.8 ± 1.5	11.2	6.1	−27.7
HIP 114066	M1V	23 06 04.82	+63 55 33.9	171.46 ± 1.59	−58.55 ± 1.57	−23.70 ± 0.80[ee]	40.81 ± 1.60	9.10	7.82 ± 0.02	−11.43	−6.1 ± 0.7	−27.0 ± 0.8	−15.5 ± 0.6	−9.0	22.7	1.4
HIP 114530 AB	G5V*	23 11 52.05	−45 08 10.6	87.53 ± 1.39	−93.36 ± 0.79	9.10 ± 0.20[r]	20.26 ± 1.13	8.02	7.47 ± 0.03	−11.66	−8.3 ± 0.7	−28.3 ± 1.5	−10.3 ± 0.3	21.4	−6.1	−44.1
HIP 115162	G4V	23 19 39.55	+42 15 09.8	77.52 ± 0.73	−66.90 ± 0.96	−19.70 ± 0.20[ee]	19.94 ± 1.14	8.15	7.61 ± 0.02	−12.35	−4.3 ± 0.6	−27.4 ± 0.6	−14.6 ± 1.2	−12.6	46.1	−15.0
HIP 115738	A0V	23 26 55.95	+01 15 20.1	86.68 ± 0.31	−94.29 ± 0.22	−4.40 ± 0.60[cc]	21.25 ± 0.29	4.94	5.32 ± 0.27	…	−6.9 ± 0.1	−25.1 ± 0.5	−12.6 ± 0.5	2.9	26.8	−38.6
HIP 116910	G8V	23 41 54.28	−35 58 39.7	69.49 ± 1.18	−67.53 ± 0.95	11.10 ± 1.70[p]	15.70 ± 1.13	8.67	8.10 ± 0.02	−11.39	−7.3 ± 1.0	−27.3 ± 2.0	−13.5 ± 1.6	18.8	−0.8	−60.8
HIP 117452 AB[a]	A0V*	23 48 55.54	−28 07 49.0	100.80 ± 0.25	−105.34 ± 0.23	8.70 ± 2.00[cc]	23.73 ± 0.22	4.60	4.80 ± 0.26	−11.79	−6.6 ± 0.4	−26.6 ± 0.3	−13.2 ± 1.9	9.1	4.3	−40.9
HIP 118008	K3V	23 56 10.67	−39 03 08.6	206.72 ± 0.51	−185.07 ± 0.54	12.10 ± 0.50[ee]	45.52 ± 0.93	7.22	6.51 ± 0.03	−12.10	−7.8 ± 0.3	−27.6 ± 0.5	−12.5 ± 0.5	6.0	−1.8	−21.1

NOTE. — (g) Teixeira et al. 2009; (h) Teixeira et al. 2008; (i) Faherty et al. 2012; (j) PPMXL; Roeser et al. 2010; (k) Riedel et al. 2011; (l) Riedel (in prep.) ; (m) UCAC3; Zacharias et al. 2009; (n) Kharchenko et al. 2007; (o) Bobylev & Bajkova 2007; (p) Torres et al. 2006; (q) Montes et al. 2001; (r) Bobylev et al. 2007; (s) Moór et al. 2006; (t) we add 0.75 mag to the J(2mass) magnitude; Cutri et al. 2003; (u) Shkolnik et al. 2011; (v) Rice et al. 2010; (w) Kiss et al. 2011; (x) Schlieder et al. 2012a; (y) Schlieder et al. 2010; (z) Mohanty et al. 2003; (aa) Grenier et al. 1999; (bb) Zuckerman & Webb 2000; (cc) Zuckerman et al. 2011; (dd) Guenther et al. 2007; (ee) Zuckerman et al. 2004; (ff) Gontcharov 2006; (gg) Anderson & Francis 2012; (hh) White et al. 2007; (ii) Gizis et al. 2007; (jj) DENIS; Epchtein et al. 1997; (kk) Koen et al. 2010; (ll) Weis 1987; (mm) Messina et al. 2010

[a] *bona fide members* with ambiguous membership, see section 9.

[b] Proper motion from van Leeuwen 2007, unless stated otherwise.

[c] Radial velocity measurement from Bailey et al. 2012, unless stated otherwise.

[d] Parallax measurement from van Leeuwen 2007, unless stated otherwise.

[e] I_C magnitude from Anderson & Francis 2012, unless stated otherwise.

[f] ROSAT X-ray flux calculated from Riaz et al. (see Section 5.4; 2006) in erg s^{-1} cm^{-2}.

TABLE 4
MEMBERSHIP PROBABILITIES OF ALL BONA FIDE MEMBERS[a]

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
β Pictoris moving group																								
HIP 560	74	98	99	0	0	0	15	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	1	0
HIP 10679	98	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 10680	66	99	99	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	1	0	0
HIP 11152	80	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0
HIP 11360	4	6	12	0	0	0	1	0	0	93	93	87	0	0	0	0	0	0	0	0	0	0	0	0
HIP 11437 A	65	99	99	0	0	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 11437 B	77	99	99	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 12545 AB	2	0	11	0	0	0	0	0	0	96	99	88	0	0	0	0	0	0	0	0	0	0	0	0
HIP 21547	98	99	99	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GJ 3305 AB	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 23200	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 23309	96	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
HIP 25486	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 27321	63	95	99	0	0	0	0	0	0	0	0	0	0	0	0	35	4	0	0	0	0	0	0	0
J0608-2753	90	73	95	0	0	0	0	0	0	9	26	4	0	0	0	0	0	0	0	0	0	0	0	0
HIP 29964	58	99	99	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	38	0	0	0	0	0
HIP 50156	1	10	4	0	0	0	0	0	0	81	60	93	0	0	0	0	0	0	11	16	0	4	12	2
TWA 22AB	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 76629 A	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 76629 BC	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 79881	80	96	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	8	3	0
HIP 84586 AB	92[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	7[b]	0	0	0	0	0	0	0	0
HIP 84586 C	98[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
HIP 86598	94	98	99	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	1	0
HIP 88399 A	80	99	99	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0
HIP 88726 AB	87	99	99	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
HIP 89829	88	99	99	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0
HIP 92024 A	56[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	42[b]	0	0	1	0	0	0	0	0
HIP 92024 BC	43	99	99	0	0	0	0	0	0	0	0	0	0	0	0	56	0	0	0	0	0	0	0	0
HIP 92680	76[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	23[b]	0	0	0	0	0	0	0	0
HIP 95261 AB	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	99	99
HIP 95270	95	99	99	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
HIP 99273	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 102141 B	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 102141 A	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 102409	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 103311	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 112312 B	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 112312	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TW Hydrae Association																								
TWA 1	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 4ABCD	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 8A	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 8B	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 26	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 19	0	0	0	83	94	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	5	24
TWA 9B	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 9A	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 27AB	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TWA 11A	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 4 — *Continued*

Name	βPMG P	βPMG P_v	βPMG $P_{v+\pi}$	TWA P	TWA P_v	TWA $P_{v+\pi}$	THA P	THA P_v	THA $P_{v+\pi}$	COL P	COL P_v	COL $P_{v+\pi}$	CAR P	CAR P_v	CAR $P_{v+\pi}$	ARG P	ARG P_v	ARG $P_{v+\pi}$	ABDMG P	ABDMG P_v	ABDMG $P_{v+\pi}$	Field P	Field P_v	Field $P_{v+\pi}$
Tucana-Horologium Association																								
HIP 490	0	0	0	0	0	0	65	99	99	0	0	0	0	0	0	0	0	0	34	0	0	0	0	0
HIP 1113	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 1481	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 1910 AB	0	0	0	0	0	0	97	99	99	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
HIP 1993	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 2484 AbB	0	0	0	0	0	0	99	48	90	0	0	0	0	0	0	0	0	0	0	0	0	0	50	9
HIP 2487 AB	0	0	0	0	0	0	98[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
HIP 2578	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 2729	0	0	0	0	0	0	99[b]	11[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	88[b]	0
HIP 3556	0	0	0	0	0	0	97	53	90	0	0	0	0	0	0	0	0	0	2	0	0	0	46	9
HIP 6485	0	0	0	0	0	0	93	99	99	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
HIP 6856	0	0	0	0	0	0	95	99	99	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
HIP 9141 AB	0	0	0	0	0	0	50	99	99	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 9685	0	0	0	0	0	0	91[b]	45[b]	74[b]	0	0	0	0	0	0	0	0	0	8[b]	0	0	0	54[b]	25[b]
HIP 9892 AB	0	0	0	0	0	0	90	99	99	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0
HIP 9902	0	0	0	0	0	0	97	99	99	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
HIP 10602	0	0	0	0	0	0	98	99	99	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
HIP 12394	0	0	0	0	0	0	99	98	99	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
HIP 12925	0	0	0	0	0	0	2	97	99	95	0	0	0	0	0	0	0	0	0	0	0	0	2	0
HIP 14551	0	0	0	0	0	0	4	37	50	94	61	49	0	0	0	0	0	0	0	0	0	0	0	0
HIP 14913 ABC	2[b]	0	0	0	0	0	74[b]	99[b]	99[b]	22[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 15247	1	0	0	0	0	0	19	99	99	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 16853 AB	0	0	0	0	0	0	98	99	99	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
HIP 17764	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 17782 AB	1	0	0	0	0	0	0	0	0	66	96	98	0	0	0	20	0	0	0	0	0	12	2	0
HIP 17797	3[b]	0	0	0	0	0	73[b]	99[b]	99[b]	22[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 18714 AB	0	0	0	0	0	0	98	99	99	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 21632	0	0	0	0	0	0	32	95	98	67	4	1	0	0	0	0	0	0	0	0	0	0	0	0
HIP 21965	0	1	0	0	0	0	15[b]	58[b]	90[b]	84[b]	40[b]	9[b]	0	0	0	0	0	0	0	0	0	0	0	0
HIP 22295	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 24947	0	0	0	0	0	0	1	97	98	97	0	0	0	0	0	0	0	0	0	0	0	0	2	1
HIP 32435	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 83494	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99
HIP 84642 AB	0	0	0	0	0	0	1	18	13	0	0	0	0	0	0	0	0	0	0	0	0	98	81	86
HIP 100751	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 104308	0	0	0	0	0	0	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99
HIP 105388	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 105404 AB	0	0	0	0	0	0	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]
HIP 107345	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 107947	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 108195 ABC	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 108422 AB	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HIP 116748 AB	0	0	0	0	0	0	96	99	99	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
HIP 118121	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Columba Association																								
HIP 1134	17	0	0	0	0	0	2	0	0	73	99	99	0	0	0	0	0	0	0	0	0	5	0	0
HIP 12413 A	1	53	96	0	0	0	90	0	0	7	46	3	0	0	0	0	0	0	0	0	0	0	0	0
HIP 16449	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 17248	1	0	0	0	0	0	0	0	0	71	99	99	0	0	0	26	0	0	0	0	0	1	0	0
HIP 19775	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 22226	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 23179	1	0	0	0	0	0	0	0	0	72	98	99	0	0	0	19	0	0	0	0	0	6	0	0
HIP 23316	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 23362	0	0	0	0	0	0	1	0	0	97	99	99	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 4 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
HIP 24947	0	0	0	0	0	0	1	0	0	97	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 25709 AB	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 26309	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 26453	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 26966	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 26990	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 28036	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0	0	0	0
HIP 28474	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0
HIP 30030	0	7	14	0	0	0	0	0	0	99	91	85	0	0	0	0	0	0	0	0	0	0	0	0
HIP 32104	0	0	0	0	0	0	0	0	0	98	99	99	0	0	0	0	0	0	0	0	0	1	0	0
HIP 114189	93	1	0	0	0	0	0	0	0	5	95	98	0	0	0	0	0	0	0	0	0	1	2	0
HIP 116805	35[b]	1	0	0	0	0	0	0	0	20[b]	81[b]	95[b]	0	0	0	0	0	0	0	0	0	43[b]	17[b]	4[b]
Carina Association																								
HIP 30034 A	0	0	0	0	0	0	0	0	0	61	49	27	37	50	71	0	0	0	0	0	0	0	0	0
HIP 32235	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0
HIP 33737	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0	0	0	0
HIP 46063	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	0	0	0	0	0	0	1	0	0
HIP 46720 AB	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0	0	0	0
Argus Association																								
HIP 4448 AB	36[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59[b]	91[b]	86[b]	0	0	0	4[b]	8[b]	13[b]
AP COL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0	0	0	0
HIP 36948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0
HIP 47135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	99	99	2	0	0	0	0	0
HIP 50191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0
HIP 57632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64[b]	42[b]	77[b]	0	0	0	35[b]	57[b]	22[b]
HIP 68994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	0	0	0	1	0	0
HIP 74405	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0	0	0	0
HIP 79797	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	99	99	0	0	0	0	0	0
HIP 98495	53[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45[b]	99[b]	99[b]	0	0	0	0	0	0
HIP 99770	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	98	99	0	0	0	11	1	0
AB Doradus moving group																								
HIP 3589 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	0	0	0
HIP 5191 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 6276	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 10272 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	1	0	0
HIP 12635	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 12638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	1	0	0
HIP 13027 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 13209	16[b]	22[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82[b]	76[b]	99[b]	1	0	0
HIP 14684	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 14809	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	1	0	0
HIP 15353	0	0	0	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	2	98	99	0	1	0
HIP 16563 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 17695	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 18859	11	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	90	99	0	0	0
HIP 19183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 22738 A	0	0	0	0	0	0	0	0	0	3[b]	0	0	0	0	0	0	0	0	96[b]	99[b]	99[b]	0	0	0
HIP 22738 B	0	0	0	0	0	0	0	0	0	2[b]	0	0	0	0	0	0	0	0	97[b]	99[b]	99[b]	0	0	0
HIP 25283 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0
HIP 25647 ABCD	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	0	0	4	99	99	0	0	0
HIP 26369	89	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	7	99	99	0	0	0
HIP 26373	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0

TABLE 4 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
HIP 26401 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	99	98	10	0	1
HIP 30314 AB	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	99	99	0	0	0
HIP 31711 AB	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	99	99	0	0	0
HIP 31878	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	99	99	0	0	0
HIP 36349 AB	74[b]	0	0	0	0	0	0	0	0	0	3[b]	0	0	0	0	0	0	0	24[b]	96[b]	99[b]	0	0	0
HIP 51317	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	1	0	0
HIP 63742 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0
HIP 76768 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98[b]	99[b]	99[b]	1	0	0
HIP 81084	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	99	99	1	0	0
HIP 82688	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	99	99	4	0	0
HIP 86346 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0
HIP 93580	84	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	71	80	4	4	19
HIP 94235 AB	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	99	99	5	0	0
HIP 95347	87	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	81	99	0	0	0
HIP 106231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0
HIP 109268	2[b]	0	0	0	0	0	0	0	0	0	0	0	2[b]	0	0	0	0	0	93[b]	99[b]	99[b]	0	0	0
HIP 110526 AB	94[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68[b]	99[b]	4[b]	31[b]	0
HIP 113579	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 113597 AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0
HIP 114066	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99[b]	99[b]	99[b]	0	0	0
HIP 114530 AB	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	79	99	99	0	0	0
HIP 115162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	99	99	2	0	0
HIP 115738	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0
HIP 116910	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	97	99	99	1	0	0
HIP 117452 AB	0	7	0	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	3	7	2	89	92
HIP 118008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	99	99	0	0	0

[a] Membership probability (P), membership probability including radial velocity information (P_v), or membership probability including radial velocity and parallax informations ($P_{v+\pi}$).
[b] Membership probability (P or P_v or $P_{v+\pi}$) for which the binary hypothesis has a higher probability.

TABLE 5
CANDIDATE MEMBERS OF YOUNG KINEMATIC GROUPS

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f$_x$)	Hα[d] (Å)	Li[e] (m Å)	$v_{rad}^{\rm meas}$[f] (km s^{-1})	$v_{rad}^{\rm pred}$[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
						β Pictoris moving group								
J00172353-6645124	9.94 ± 0.05	8.56 ± 0.02	104.30 ± 1.00	−13.50 ± 1.00	M2.5V	−11.77	6.0	…	11.4 ± 0.8[o]	11.0 ± 1.6	…	35 ± 3	99.9	16
J01112542+1526214	10.98 ± 0.00[r]	9.08 ± 0.03	180.00 ± 2.00[y]	−120.00 ± 5.00[y]	M5V+M6V	−12.13	9.3	629[o]	4.0 ± 0.1	3.1 ± 1.6	21.8 ± 0.8[vv]	20 ± 1	99.9[j]	16
J01351393-0712517	10.53 ± 0.08	8.96 ± 0.02	96.00 ± 3.00[y]	−50.00 ± 4.00[y]	M4V	−11.92	15.3	…	11.7 ± 5.3[uu]	9.4 ± 1.6	37.9 ± 2.4[uu]	35 ± 3	33.2[j]	16
J01365516-0647379	11.22 ± 0.06	9.71 ± 0.02	175.10 ± 4.40[y]	−98.80 ± 4.40[y]	M4V	−12.03	6.0	…	12.2 ± 0.4[uu]	9.5 ± 1.6	24.0 ± 0.4[uu]	21 ± 1	27.4	16
J01535076-1459503	9.82 ± 0.06	7.94 ± 0.03	105.00 ± 1.40	−45.70 ± 1.40	M3V+M3V	−11.54	6.6	…	…	12.0 ± 1.6	…	28 ± 2	99.9[j]	16
J05015881+0958587	8.74 ± 0.04[vv]	7.21 ± 0.02	12.09 ± 9.92[n]	−74.41 ± 5.71[n]	M3V(sb2)*	−11.37	6.0[ll]	0[ii]	14.9 ± 3.5[jj]	16.0 ± 2.0	24.9 ± 1.3[vv]	38 ± 3	99.9[j]	5
J05064946-2135038	8.45 ± 0.04[vv]	7.00 ± 0.02	34.20 ± 1.20	−33.80 ± 2.10	M3.5Ve+M4V	−11.06	2.4[ll]	20[ii]	21.2 ± 0.9[ll]	21.1 ± 1.7	19.2 ± 0.5[vv]	21 ± 4	99.9[j]	7
J05082729-2101444	11.61 ± 0.06	9.72 ± 0.02	31.40 ± 2.30	−16.00 ± 2.30	M5V	−12.44	24.9	…	…	21.0 ± 1.7	…	25 ± 5	99.9[j]	16
J05224571-3917062	9.66 ± 0.06	8.31 ± 0.02	−1.90 ± 0.90	8.80 ± 0.80	K7V	−11.41	1.6	85[k]	36.4 ± 0.0[k]	21.3 ± 1.5	…	33 ± 6	99.9	16
J05241914-1601153	10.59 ± 0.06	8.67 ± 0.03	14.00 ± 5.00[y]	−36.00 ± 2.00[y]	M4.5+M5.0	−11.99	11.7	223[o]	20.5 ± 4.0[o]	20.8 ± 1.8	…	20 ± 5	99.9[j]	16
J05320450-0305291	9.26 ± 0.06	7.88 ± 0.02	7.20 ± 2.00	−45.50 ± 2.80	M2Ve+M3.5	−11.43	4.8	100[ii]	…	19.1 ± 1.9	…	42 ± 6	99.9[j]	7
J05332802-4257205	9.71 ± 0.06	8.00 ± 0.03	−19.70 ± 6.10	43.60 ± 5.80	M4.5V	−11.69	3.9	…	…	21.1 ± 1.5	…	16 ± 4	99.9[j]	16
J05335981-0221325	9.90 ± 0.06	8.56 ± 0.02	10.00 ± 1.00[y]	−50.00 ± 1.00[y]	M3V	−11.54	6.1	…	…	19.0 ± 1.9	…	42 ± 5	99.9	16
J05422387-2758031	12.95 ± 0.06	11.41 ± 0.03	1.30 ± 3.70	−4.20 ± 1.70	M4.5V	−12.21	8.5	…	…	21.6 ± 1.6	…	44 ± 9	99.3	16
J06131330-2742054	9.55 ± 0.02[vv]	8.00 ± 0.03	−14.90 ± 1.00	−2.10 ± 1.00	M3.5V*	−11.51	5.1	…	…	21.6 ± 1.6	29.2 ± 0.8[vv]	25 ± 6	99.9[j]	16
J06135773-2723550	10.97 ± 0.06	9.74 ± 0.02	−3.70 ± 0.80	2.70 ± 0.90	K5V	−12.12	−0.8	170[k]	−6.8 ± 0.0[k]	21.6 ± 1.6	…	51 ± 8	97.3	16
J06161032-1320422	12.85 ± 0.05	11.35 ± 0.03	−5.40 ± 2.70	−33.80 ± 2.80	M3.5+M5.0	−12.22	4.2	…	…	20.6 ± 1.8	…	47 ± 7	97.9	16
J08173943-8243298	9.08 ± 0.06	7.47 ± 0.02	−81.90 ± 0.90	102.60 ± 1.50	M4	−11.24	7.6	…	…	12.9 ± 1.5	…	27 ± 2	99.9[j]	16
J08475676-7854532	10.84 ± 0.06	9.32 ± 0.02	−32.10 ± 1.80	26.80 ± 1.80	M3V	−12.03	6.6	…	…	13.4 ± 1.5	…	66 ± 7	93.8[j]	16
J11493184-7851011	10.73 ± 0.00[k]	9.45 ± 0.02	−43.40 ± 2.90	−8.10 ± 1.80	M1V	−12.07	4.7	560[k]	13.4 ± 1.3[k]	10.9 ± 1.5	…	71 ± 6	78.3	7
J14142141-1521215	8.95 ± 0.02[n]	7.43 ± 0.02	−199.90 ± 8.70[y]	−172.80 ± 6.90[y]	K5V	−11.24	2.3	…	−4.1 ± 0.0[ll]	−7.5 ± 1.7	30.2 ± 4.5	16 ± 1	99.9	16
J16572029-5343316	9.97 ± 0.07	8.69 ± 0.02	−14.70 ± 6.10	−85.90 ± 2.20	M3V	−12.24	2.5	…	…	−1.8 ± 1.9	…	51 ± 3	99.5	16
J17150219-3333398	9.32 ± 0.06	7.92 ± 0.02	7.60 ± 5.30	−176.90 ± 1.20	M0V	−11.46	3.0	…	…	−9.2 ± 2.0	…	23 ± 1	96.9	16
J17292067-5014529	10.30 ± 0.00[k]	8.87 ± 0.03	−6.30 ± 1.50	−63.50 ± 4.10	M3Ve	−12.13	6.7	50[k]	−0.4 ± 0.0[k]	−3.3 ± 2.0	…	66 ± 4	99.9[j]	6
J18142207-3246100	10.64 ± 0.00[k]	9.44 ± 0.02	7.30 ± 4.70[y]	−39.90 ± 4.70[y]	M1.5V*	−11.66	3.1	200[k]	−5.7 ± 0.0[k]	−9.6 ± 2.1	…	97 ± 6	87.9[j]	6
J18151564-4927472	10.36 ± 0.06	8.92 ± 0.02	8.30 ± 1.60	−71.50 ± 1.60	M3V	−11.96	7.6	…	…	−3.6 ± 2.0	…	61 ± 4	91.2[j]	16
J18420694-5554254	10.88 ± 0.06[o]	9.49 ± 0.02	11.20 ± 5.30	−81.40 ± 2.70	M3.5V	−11.79	6.9	…	1.0 ± 0.7[o]	−1.0 ± 1.9	…	54 ± 3	76.2	16
J18465255-6210366	9.99 ± 0.00[k]	8.75 ± 0.02	14.60 ± 1.40	−81.10 ± 1.30	M1Ve	−12.01	1.9[k]	332[k]	2.4 ± 0.1[k]	1.3 ± 1.9	…	54 ± 3	58.2	6
J18495543-0134087	11.20 ± 0.09[o]	9.78 ± 0.03	9.00 ± 9.00[y]	−35.90 ± 9.00[y]	M2.5V	−12.05	5.8	…	…	−17.7 ± 1.9	…	63 ± 7	97.9	16
J18504448-3147472	9.44 ± 0.00[k]	8.31 ± 0.02	16.60 ± 1.80	−74.70 ± 0.70	K7Ve	−11.65	1.8[k]	492[k]	−6.0 ± 1.0[k]	−9.5 ± 2.0	…	53 ± 3	92.5	6
J18580415-2953045	9.98 ± 0.00[k]	8.86 ± 0.02	11.50 ± 1.40	−49.50 ± 1.40	M0Ve	−11.76	2.8[k]	483[k]	−4.9 ± 1.0[k]	−10.0 ± 2.0	…	77 ± 4	98.9[j]	6
J19102820-2319486	10.59 ± 0.06	9.10 ± 0.02	17.60 ± 1.90	−51.60 ± 1.50	M4V	−11.86	8.2	…	…	−11.7 ± 2.0	…	67 ± 5	99.9[j]	16
J19233820-4606316	10.19 ± 0.05	9.11 ± 0.03	17.90 ± 0.90	−57.90 ± 0.90	M0V	−12.07	2.0	…	−0.7 ± 0.7[o]	−3.9 ± 2.0	…	71 ± 4	98.9	16
J19243494-3442392	11.29 ± 0.05	9.67 ± 0.02	23.20 ± 1.80	−72.10 ± 1.80	M4V	−12.50	13.9	…	…	−7.8 ± 2.0	…	55 ± 3	99.9[j]	16
J19312434-2134226	10.04 ± 0.06	8.69 ± 0.02	63.00 ± 1.60	−110.10 ± 1.60	M2.5V	−11.97	8.9	…	−26.0 ± 1.8[uu]	−11.7 ± 2.0	26.0 ± 2.0[uu]	31 ± 2	98.6	16
J19560294-3207186	10.85 ± 0.06	8.96 ± 0.03	32.60 ± 1.90	−61.00 ± 1.20	M4V	−11.76	6.2	−100[ff]	−11.0 ± 5.0[ff]	−7.7 ± 2.0	…	56 ± 4	98.8[j]	8,12
J19560438-3207376	10.13 ± 0.06	8.71 ± 0.03	30.30 ± 1.50	−66.60 ± 1.00	M0V	−11.76	0.7[ff]	110[ff]	−7.2 ± 0.4[ff]	−7.6 ± 2.0	…	55 ± 3	99.9[j]	8,12
J20013718-3313139	10.27 ± 0.05	9.15 ± 0.02	27.10 ± 2.60	−60.90 ± 1.80	M1V	−12.23	2.6	−100[ff]	−5.6 ± 1.8[ff]	−7.1 ± 1.9	…	62 ± 3	98.9	12
J20100002-2801410	10.20 ± 0.02[vv]	8.65 ± 0.02	40.40 ± 0.90	−62.70 ± 0.90	M2.5+M3.5	−11.84	10.1	…	…	−8.4 ± 1.9	48.0 ± 3.1[vv]	53 ± 3	99.9[j]	16
J20333759-2556521	11.57 ± 0.01[vv]	9.71 ± 0.02	51.80 ± 1.70	−76.80 ± 1.40	M4.5V	−12.42	11.4	…	…	−7.9 ± 1.9	48.3 ± 3.3[vv]	40 ± 3	99.9[j]	16
J20431469-2925217	13.16 ± 0.06	11.42 ± 0.04	36.80 ± 6.00	−68.90 ± 5.60	K5V	−12.92	−2.0	…	…	−6.5 ± 1.9	…	51 ± 3	96.9	16
J20434114-2433534	10.11 ± 0.05	8.60 ± 0.02	56.20 ± 1.30	−72.00 ± 1.30	M3.7+M4.1	−11.71	6.5	…	−6.0 ± 0.9[uu]	−7.8 ± 1.8	28.1 ± 3.9[uu]	44 ± 3	99.9[j]	16
J20560274-1710538	9.26 ± 0.06	7.85 ± 0.02	59.30 ± 3.00[n]	−63.00 ± 3.20[n]	K7V+M0V	−11.78	1.4	420[k]	−6.9 ± 0.0[k]	−9.1 ± 1.8	…	45 ± 3	99.9[j]	5

TABLE 5 — *Continued*

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f$_x$)	Hα[d] (Å)	Li[e] (m Å)	v_{rad}^{meas}[f] (km s^{-1})	v_{rad}^{pred}[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
J21073678-1304581	10.11 ± 0.06	8.73 ± 0.02	60.60 ± 1.60	−86.60 ± 1.60	M3V	−11.88	5.4	…	…	−9.4 ± 1.7	…	36 ± 2	91.4	16
J21100535-1919573	9.57 ± 0.06	8.11 ± 0.03	88.60 ± 1.20	−92.50 ± 1.20	M2V	−11.44	5.4	…	−5.1 ± 1.0[o]	−7.8 ± 1.8	…	32 ± 2	99.9[j]	16
J21103096-2710513	13.30 ± 0.06	11.20 ± 0.03	60.30 ± 4.20	−79.70 ± 4.10	M5V	−12.48	11.3	…	…	−5.7 ± 1.8	…	40 ± 2	99.9[j]	16
J21103147-2710578	12.02 ± 0.05	10.30 ± 0.02	70.60 ± 1.90	−72.30 ± 2.80	M4.5V	−12.48	9.0	…	…	−5.7 ± 1.8	…	42 ± 3	99.9[j]	16
J21212873-6655063	8.90 ± 0.00[k]	7.88 ± 0.03	98.20 ± 1.10	−105.70 ± 1.80	K7V	…	…	15[k]	3.3 ± 0.0[k]	5.7 ± 1.7	30.2 ± 1.3	32 ± 1	57.6	4,9
J21551741-0045478	12.79 ± 0.17[v]	11.09 ± 0.02	62.00 ± 0.00[y]	−48.00 ± 1.00[y]	M4.5V	−12.36	12.5	…	…	−9.0 ± 1.6	…	47 ± 4	95.9	16
J22004158+2715135	9.54 ± 0.17[v]	8.56 ± 0.03	75.30 ± 1.00	−16.70 ± 1.20	M0.0Ve	−11.80	2.6[nn]	…	−13.3 ± 2.4[nn]	−12.8 ± 1.4	…	44 ± 4	81.5	8
J22424896-7142211	8.87 ± 0.00[k]	7.79 ± 0.02	95.20 ± 0.80	−52.30 ± 0.80	K7Ve+K5V	−11.28	1.9[k]	440[k]	8.6 ± 0.5[k]	8.8 ± 1.7	…	37 ± 2	94.8	6
J23172807+1936469	9.51 ± 0.17[v]	8.02 ± 0.02	350.00 ± 2.00[y]	−90.00 ± 3.00[y]	M3.5+M4.5	−11.70	3.6	…	−3.7 ± 0.0[ll]	−6.4 ± 1.4	…	12 ± 1	94.4	16
J23301341-2023271	9.02 ± 0.06[n]	7.20 ± 0.02	314.50 ± 7.20[y]	−208.10 ± 6.10[y]	M3V	−11.44	3.3	0[k]	−5.7 ± 0.0[k]	2.2 ± 1.6	16.2 ± 0.9	11 ± 1	99.9[j]	16
J23314492-0244395	11.24 ± 0.07[o]	9.51 ± 0.02	90.00 ± 2.00[y]	−60.00 ± 1.00[y]	M4.5V	−11.95	19.0	…	…	−1.1 ± 1.5	…	38 ± 3	95.0[j]	16
J23323085-1215513	8.56 ± 0.00[k]	7.45 ± 0.02	137.90 ± 1.00	−81.00 ± 1.00	M0Ve	−11.32	2.8	185[k]	1.8 ± 0.7[k]	0.8 ± 1.5	…	28 ± 1	95.9	6
J23500639+2659519	12.13 ± 0.17[v]	10.14 ± 0.02	182.00 ± 2.00[y]	−44.00 ± 0.00[y]	M3.5V	−12.27	9.8	…	−0.7 ± 2.8[uu]	−5.2 ± 1.4	…	23 ± 2	92.8[j]	16
J23512227+2344207	11.68 ± 0.17[v]	9.68 ± 0.02	269.80 ± 4.20[y]	−77.30 ± 4.20[y]	M4V	−12.37	7.3	…	−2.1 ± 0.5[uu]	−4.5 ± 1.4	…	16 ± 1	95.0	16
TW Hydrae Association														
J10182870-3150029	9.94 ± 0.00[k]	8.87 ± 0.03	−55.50 ± 3.20	−22.60 ± 3.70	M0Ve*	−11.70	3.8[k]	510[k]	20.7 ± 1.5[k]	15.5 ± 1.7	…	54 ± 5	99.9	2
J10252092-4241539	10.64 ± 0.06	9.50 ± 0.03	−46.80 ± 1.20	−2.20 ± 1.20	M1V	−12.08	4.1	490[xx]	…	15.5 ± 1.6	…	58 ± 5	97.4	13
J10423011-3340162	9.21 ± 0.00[k]	7.79 ± 0.02	−122.20 ± 2.20[y]	−29.30 ± 2.20[y]	M2Ve	−11.59	6.5	530[k]	11.4 ± 0.0[k]	14.3 ± 1.7	…	37 ± 4	96.9[j]	2
J11102788-3731520	9.29 ± 0.06	7.65 ± 0.02	−107.30 ± 0.90	−18.00 ± 1.10	M4Ve+M4Ve	−11.64	12.7	710[k]	15.6 ± 0.2[k]	13.0 ± 1.8	…	41 ± 4	99.9[j]	1
J11132622-4523427	10.71 ± 0.06	9.41 ± 0.03	−44.10 ± 1.40	−8.10 ± 1.30	M0Ve*	−12.00	17.7	589	15.8 ± 2.0[ee]	13.2 ± 1.9	…	58 ± 5	99.9	5
J11210549-3845163	10.49 ± 0.00[k]	9.00 ± 0.03	−68.30 ± 2.70	−12.10 ± 1.50	M1Ve	−12.02	3.5[k]	550[k]	12.7 ± 0.0[k]	12.5 ± 1.9	…	52 ± 5	99.9[j]	5
J11211723-3446454	9.66 ± 0.05	8.43 ± 0.04	−67.40 ± 0.00[k]	−17.00 ± 0.00[k]	M1Ve	−11.47	2.3[k]	580[k]	11.3 ± 0.0[k]	12.2 ± 1.9	…	52 ± 5	99.9	5
J11211745-3446497	9.73 ± 0.05	8.43 ± 0.04	−67.40 ± 0.00[k]	−17.00 ± 0.00[k]	M1Ve	−11.47	1.5[k]	550[k]	11.6 ± 0.0[k]	12.2 ± 1.9	…	51 ± 5	99.9	5
J11315526-3436272	9.27 ± 0.06	7.67 ± 0.03	−82.60 ± 0.80	−22.60 ± 1.00	M2+M2.5+M9	−11.36	8.7	629[k]	12.7 ± 3.8[k]	11.5 ± 2.0	…	46 ± 5	99.9[j]	1
J11321831-3019518	11.31 ± 0.06	9.64 ± 0.02	−89.60 ± 1.30	−25.80 ± 1.30	M5Ve	…	6.8[bb]	600[bb]	12.3 ± 1.5[bb]	11.1 ± 2.0	…	45 ± 4	99.9	10
J12072738-3247002	10.14 ± 0.06	8.62 ± 0.03	−72.70 ± 0.90	−29.30 ± 0.90	M3Ve+M3Ve	−12.04	2.4[pp]	500[ee]	8.5 ± 1.2[ee]	9.1 ± 2.3	…	48 ± 4	99.9[j]	5
J12153072-3948426	9.50 ± 0.00[k]	8.17 ± 0.03	−74.00 ± 0.80	−27.70 ± 0.80	M1Ve	−11.60	2.6[k]	555[k]	7.5 ± 0.1[k]	9.4 ± 2.3	…	50 ± 4	99.9[j]	5
J12313807-4558593	10.72 ± 0.07	9.33 ± 0.03	−64.40 ± 3.10	−28.60 ± 1.00	M3Ve*	−12.40	3.1[pp]	160[ii]	8.1 ± 4.0[q]	9.1 ± 2.4	…	54 ± 5	99.9	5
J12350424-4136385	10.49 ± 0.00[k]	9.12 ± 0.02	−70.50 ± 1.10	−29.90 ± 1.10	M2Ve	−11.98	7.5	500[k]	6.6 ± 0.0[k]	8.5 ± 2.5	…	53 ± 4	99.9	2
J13412668-4341522	12.41 ± 0.06	10.75 ± 0.02	−107.00 ± 3.00	−60.80 ± 3.00	M3.5V	−12.31	8.4	…	…	4.9 ± 3.0	…	42 ± 3	96.3	16
Tucana-Horologium Association														
J00171443-7032021	10.17 ± 0.06	9.00 ± 0.03	55.30 ± 2.30	−28.40 ± 14.40	M0.5V	−12.04	2.4	…	…	8.0 ± 1.5	…	63 ± 4	99.2[j]	16
J01220441-3337036	9.34 ± 0.06	8.31 ± 0.02	107.20 ± 1.00	−59.00 ± 1.00	K7Ve	−11.65	0.8	0[k]	4.8 ± 0.0[k]	4.5 ± 1.3	…	39 ± 2	98.3	11
J01521830-5950168	10.26 ± 0.06	8.94 ± 0.02	107.80 ± 1.80	−27.00 ± 1.80	M2-3V	…	2.3[ff]	−20[ff]	7.9 ± 1.6[ff]	9.9 ± 1.5	…	40 ± 2	95.3	12
J02045317-5346162	12.08 ± 0.06[o]	10.44 ± 0.02	95.60 ± 2.90	−30.90 ± 3.10	K5V	−11.84	−1.8	…	…	10.0 ± 1.5	…	42 ± 2	94.9[j]	16
J02070176-4406380	10.68 ± 0.05	9.27 ± 0.03	95.70 ± 3.60	−32.80 ± 13.40	M3.5V	−12.22	4.1	…	…	9.1 ± 1.4	…	43 ± 2	98.9[j]	16
J02414683-5259523	8.62 ± 0.00[k]	7.58 ± 0.02	98.50 ± 1.60	−14.00 ± 1.30	K6Ve	−11.28	1.2[k]	298[k]	12.5 ± 1.6[k]	11.8 ± 1.5	…	42 ± 2	96.5[j]	5
J02414730-5259306	9.79 ± 0.00[k]	8.48 ± 0.03	92.20 ± 1.10	−4.20 ± 1.50	M2.5V	−11.28	5.5	10[k]	12.7 ± 1.2[k]	11.8 ± 1.5	…	43 ± 3	94.7[j]	5
J02423301-5739367	9.51 ± 0.00[k]	8.56 ± 0.02	83.80 ± 0.90	−8.80 ± 1.30	K5Ve	−12.22	0.4[k]	120[k]	12.4 ± 0.1[k]	12.0 ± 1.5	…	49 ± 3	90.8	5
J03190864-3507002	9.60 ± 0.06	8.58 ± 0.03	89.70 ± 1.60[y]	−19.40 ± 1.60[y]	K7Ve	−12.13	1.3	65[k]	13.5 ± 0.2[k]	12.9 ± 1.5	…	44 ± 3	84.4	7
J03315564-4359135	9.32 ± 0.00[k]	8.30 ± 0.02	87.40 ± 1.70[y]	−5.60 ± 1.20[y]	K6Ve	−11.85	1.9	251[k]	15.5 ± 0.3[k]	14.2 ± 1.5	…	44 ± 2	96.3	7
J03454058-7509121	12.39 ± 0.05	10.82 ± 0.02	64.30 ± 5.60	23.00 ± 2.50	M4V	−12.24	3.1	…	…	13.3 ± 1.7	…	55 ± 3	99.9[j]	16
J04213904-7233562	11.20 ± 0.05	9.87 ± 0.02	62.20 ± 1.30	25.40 ± 1.30	M2.5V	−12.15	3.5	…	…	14.4 ± 1.7	…	54 ± 3	99.9	16

TABLE 5 — *Continued*

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f_x)	Hα[d] (Å)	Li[e] (m Å)	v_{rad}^{meas}[f] (km s^{-1})	v_{rad}^{pred}[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
J04440099-6624036	10.53 ± 0.05	9.47 ± 0.02	53.00 ± 4.00	30.20 ± 4.00	M0.5V	–12.37	2.6	…	…	15.8 ± 1.7	…	56 ± 3	97.5	16
J04480066-5041255	9.79 ± 0.00[k]	8.74 ± 0.03	54.30 ± 1.80	14.10 ± 1.80	K7Ve	–11.94	1.7	40[k]	19.3 ± 0.1[k]	17.7 ± 1.7	…	53 ± 3	95.9	7
J05332558-5117131	10.00 ± 0.00[k]	8.99 ± 0.02	44.00 ± 1.80	24.20 ± 1.70	K7V	–12.38	1.6	50[k]	19.6 ± 0.3[o]	19.2 ± 1.7	…	54 ± 4	98.5	16
J17080882-6936186	10.51 ± 0.06	9.06 ± 0.02	–55.60 ± 1.70	–80.20 ± 1.70	M3.5V	–12.12	8.1	…	…	5.0 ± 1.6	…	49 ± 3	93.2[j]	16
J17130733-8552105	9.69 ± 0.06	8.59 ± 0.03	–35.20 ± 0.90	–58.10 ± 0.90	M0V	–11.86	3.9	…	…	9.9 ± 1.7	…	62 ± 4	98.5[j]	16
J19225071-6310581	10.89 ± 0.05	9.45 ± 0.02	–10.70 ± 1.90	–77.40 ± 1.90	M3V	–11.89	8.2	…	…	0.9 ± 1.5	…	61 ± 4	99.9[j]	16
J21471964-4803166	12.29 ± 0.06	10.73 ± 0.02	50.40 ± 3.20	–72.90 ± 2.50	M4V	–12.41	6.4	…	…	–3.3 ± 1.4	…	50 ± 3	96.7[j]	16
J21490499-6413039	12.18 ± 0.06	10.35 ± 0.02	47.80 ± 1.90	–96.50 ± 2.00	M4.5V	–12.10	11.4	…	…	2.5 ± 1.5	…	44 ± 2	99.9[j]	16
J22021626-4210329	10.08 ± 0.06	8.93 ± 0.03	51.80 ± 0.90	–93.30 ± 1.00	M1V	–11.90	2.8	…	–2.0 ± 1.1[o]	–4.9 ± 1.4	…	45 ± 2	98.4	16
J23204705-6723209	11.34 ± 0.06	9.99 ± 0.04	80.00 ± 1.60	–97.10 ± 9.90	M5V	–12.08	11.5	…	…	5.7 ± 1.5	…	39 ± 2	99.9	16
J23261069-7323498	9.91 ± 0.00[k]	8.84 ± 0.03	72.10 ± 1.00	–66.80 ± 1.00	M0V(sb)	–11.80	5.1	123[k]	7.8 ± 1.6[k]	7.4 ± 1.5	…	48 ± 2	99.9	7
J23285763-6802338	10.52 ± 0.06[o]	9.26 ± 0.02	67.90 ± 1.70	–65.60 ± 3.20	M2.5V	–11.98	6.0	…	…	6.1 ± 1.5	…	49 ± 3	99.9	16
J23452225-7126505	11.78 ± 0.06	10.19 ± 0.02	76.50 ± 1.80	–64.00 ± 1.80	M3.5V	–12.19	11.1	…	…	7.3 ± 1.5	…	46 ± 2	99.9[j]	16
J23474694-6517249	10.36 ± 0.06	9.10 ± 0.02	80.70 ± 1.20	–66.40 ± 1.20	M1.5V	–12.24	2.5	…	6.4 ± 0.7[o]	6.0 ± 1.5	…	45 ± 2	99.9	16
Columba Association														
J02303239-4342232	8.88 ± 0.08	8.02 ± 0.03	81.40 ± 0.80	–13.50 ± 1.00	K5Ve	–11.85	0.0[k]	50[k]	16.3 ± 1.1[k]	15.2 ± 1.0	…	51 ± 2	38.3	7
J03050976-3725058	10.83 ± 0.09	9.54 ± 0.02	51.60 ± 1.30	–11.50 ± 1.30	M1.5+M3.0	–12.53	5.2	…	…	17.1 ± 1.0	…	72 ± 4	98.1[j]	16
J03241504-5901125	10.55 ± 0.00[k]	9.55 ± 0.02	37.80 ± 1.20	10.50 ± 1.10	K7V	–12.40	1.6	235[k]	17.5 ± 1.3[k]	17.7 ± 1.0	…	91 ± 4	61.6	3
J03320347-5139550	11.48 ± 0.06	10.23 ± 0.03	37.10 ± 4.30	10.80 ± 1.40	M2V	–12.19	4.1	…	…	18.5 ± 1.0	…	88 ± 5	94.7	16
J04071148-2918342	10.14 ± 0.06	9.06 ± 0.02	41.60 ± 1.10	–6.10 ± 1.00	K7.5+M1.0	–11.98	3.2	…	…	20.4 ± 1.0	…	72 ± 4	99.4	16
J04091413-4008019	12.04 ± 0.05	10.65 ± 0.02	46.40 ± 1.90	8.10 ± 1.70	M3.5V	–12.40	16.9	…	…	20.7 ± 1.0	…	63 ± 4	99.1	16
J04240094-5512223	11.16 ± 0.09	9.80 ± 0.02	41.60 ± 2.10	17.20 ± 2.10	M2.5V	–12.39	3.7	…	20.5 ± 0.7[o]	20.2 ± 1.1	…	68 ± 4	55.4[j]	16
J04313859-3042509	11.61 ± 0.06	10.18 ± 0.02	33.60 ± 1.50	–5.80 ± 1.50	M3.5V	–12.32	8.5	…	…	21.7 ± 1.0	…	75 ± 5	97.3[j]	16
J04515303-4647309	10.95 ± 0.00[k]	9.80 ± 0.02	29.00 ± 3.00[y]	14.50 ± 2.70[y]	M0V	–11.63	1.0[k]	80[k]	24.0 ± 0.0[k]	22.1 ± 1.1	…	77 ± 5	99.9	7
J05064991-2135091	8.25 ± 0.02[vv]	7.05 ± 0.02	53.10 ± 1.90	–23.40 ± 1.00	M1Ve	–11.06	2.4[ll]	20[ii]	23.7 ± 1.7[ll]	22.8 ± 1.0	19.2 ± 0.5[vv]	37 ± 3	84.8[j]	7
J05100427-2340407	10.52 ± 0.06	9.24 ± 0.03	43.40 ± 4.40	–13.00 ± 0.90	M3+M3.5	–11.75	5.4	…	…	23.1 ± 1.1	…	48 ± 4	94.5	16
J05100488-2340148	10.80 ± 0.06	9.60 ± 0.04	35.60 ± 1.60	–13.10 ± 1.50	M2+M2.5	–11.75	6.6	…	…	23.1 ± 1.1	…	57 ± 5	98.8	16
J05111098-4903597	12.05 ± 0.06	10.64 ± 0.03	33.00 ± 2.50	20.40 ± 2.10	M3.5V	–11.99	6.8	…	…	22.4 ± 1.1	…	62 ± 5	98.4	16
J05164586-5410168	11.80 ± 0.05	10.43 ± 0.02	26.30 ± 1.90	26.60 ± 2.40	M3V	–12.25	2.7	…	15.1 ± 3.9[kk]	21.9 ± 1.1	…	69 ± 5	92.1	16
J05195412-0723359	12.58 ± 0.06	11.07 ± 0.02	49.70 ± 4.10[z]	–38.00 ± 4.10[z]	M4V	–12.31	7.9	…	…	21.5 ± 1.0	…	43 ± 3	90.3	16
J05195695-1124440	11.75 ± 0.06	10.37 ± 0.02	24.00 ± 2.00[y]	–18.00 ± 3.00[y]	M3.5V	–12.19	11.8	…	…	22.2 ± 1.0	…	76 ± 6	98.4[j]	16
J05241317-2104427	11.81 ± 0.06	10.21 ± 0.02	33.10 ± 3.70	–16.00 ± 4.80	M4V	–12.37	8.3	…	…	23.4 ± 1.1	…	52 ± 5	98.2[j]	16
J05395494-1307598	12.17 ± 0.06	10.60 ± 0.02	26.40 ± 8.50	–18.90 ± 8.50	M3V	–12.45	5.6	…	…	23.1 ± 1.1	…	61 ± 5	99.0[j]	16
J05425587-0718382	11.52 ± 0.05	10.10 ± 0.03	19.10 ± 2.10	–22.20 ± 2.00	M3V	–12.21	7.0	…	…	22.3 ± 1.1	…	75 ± 6	98.2[j]	16
J05432676-3025129	11.53 ± 0.06	10.41 ± 0.02	11.60 ± 2.60	–0.30 ± 1.20	M0.5V	–12.05	4.5	…	…	24.3 ± 1.1	…	91 ± 10	99.9	16
J05470650-3210413	11.36 ± 0.06	9.86 ± 0.02	23.90 ± 0.90	6.80 ± 0.90	M2.5V	–12.22	5.6	…	…	24.4 ± 1.1	…	52 ± 7	99.3[j]	16
J06002304-4401217	11.67 ± 0.06	10.31 ± 0.04	24.40 ± 4.30	15.30 ± 3.60	M4V+M4V	–12.05	12.2	…	…	24.0 ± 1.1	…	54 ± 6	97.7	16
J06012186-1937547	12.88 ± 0.06	11.37 ± 0.03	10.40 ± 3.40	–9.00 ± 3.50	M3.5V	–12.10	10.3	…	…	24.3 ± 1.1	…	79 ± 10	99.9[j]	16
J06511418-4037510	9.19 ± 0.06	8.17 ± 0.02	0.00 ± 2.80[y]	8.00 ± 1.40[y]	K5V	–11.97	–0.8	0[k]	13.6 ± 0.0[k]	24.8 ± 1.1	…	71 ± 11	99.9[j]	16
J07065772-5353463	9.62 ± 0.06	8.54 ± 0.03	–7.80 ± 1.10	40.40 ± 1.30	M0V	–11.77	2.7	…	…	23.0 ± 1.2	…	53 ± 4	99.9	16
J09331427-4848331	9.99 ± 0.06	8.94 ± 0.03	–46.50 ± 1.20	23.40 ± 2.60	K7V	–11.93	2.7	0[k]	22.0 ± 0.0[k]	20.5 ± 1.2	…	58 ± 3	13.2	16
Carina Association														
J06112997-7213388	11.00 ± 0.05	9.55 ± 0.02	23.40 ± 1.60	60.80 ± 1.60	M4V+M5V	–12.33	9.0	…	…	19.9 ± 0.5	…	45 ± 1	90.4[j]	16
J06234024-7504327	11.23 ± 0.05	9.88 ± 0.03	13.90 ± 1.80	47.20 ± 1.80	M3.5+M5	–11.94	8.0	…	…	19.1 ± 0.5	…	60 ± 2	90.4[j]	16

TABLE 5 — *Continued*

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f_x)	Hα[d] (Å)	Li[e] (m Å)	v_{rad}^{meas}[f] (km s^{-1})	v_{rad}^{pred}[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
J07540718-6320149	11.66 ± 0.06	10.33 ± 0.03	−10.80 ± 2.40	30.00 ± 2.40	M3V	−12.23	8.5	…	…	21.9 ± 0.5	…	83 ± 4	99.9[j]	16
J08185942-7239561	10.86 ± 0.06	9.78 ± 0.02	−24.30 ± 0.90	54.00 ± 0.90	M0V	−12.44	2.1	…	…	19.5 ± 0.6	…	60 ± 2	99.9	16
J08422284-8345248	10.45 ± 0.06	9.45 ± 0.03	−49.50 ± 1.30	91.20 ± 1.20	K7V	−11.99	2.1	…	…	16.3 ± 0.6	…	41 ± 1	90.4	16
J10140807-7636327	11.34 ± 0.06	9.75 ± 0.02	−47.20 ± 1.70	30.60 ± 3.60	M4V+M5V	−12.17	11.0	…	…	17.1 ± 0.6	…	69 ± 2	99.9[j]	16
Argus Association														
J00503319+2449009	9.42 ± 0.00[s]	7.95 ± 0.02	223.70 ± 2.30[y]	−40.86 ± 2.30[y]	M3.5+M4.5	−11.49	5.8	…	6.0 ± 1.1[jj]	4.0 ± 1.5	11.8 ± 0.7	22 ± 1	99.9[j]	16
J03033668-2535329	9.29 ± 0.04[n]	8.00 ± 0.02	213.20 ± 1.90[y]	94.50 ± 1.80[y]	M0.0+M6.0	−12.03	0.4	0[k]	20.1 ± 0.0[k]	16.1 ± 0.9	38.6 ± 3.8	18 ± 1	99.9	16
J03214689-0640242	9.47 ± 0.00[u]	7.86 ± 0.03	322.70 ± 2.70[y]	−48.50 ± 3.00[y]	M2V	−13.10	0.0	…	29.7 ± 0.0[ll]	18.9 ± 1.0	…	10 ± 1	99.9	16
J03282609-0537361	12.15 ± 0.17[v]	10.29 ± 0.02	118.00 ± 1.00[y]	−18.00 ± 2.00[y]	M4V	−12.44	5.2	…	…	19.4 ± 1.0	…	27 ± 2	98.4[j]	16
J03415581-5542287	11.89 ± 0.06	10.19 ± 0.03	231.70 ± 9.00[y]	250.90 ± 9.00[y]	M4.5+M6	−12.53	10.9	…	…	11.9 ± 1.4	…	14 ± 1	98.9	16
J04132663-0139211	10.96 ± 0.06	9.38 ± 0.02	132.00 ± 4.00[y]	−6.00 ± 4.00[y]	M4+M5.5	−12.09	9.8	60[dd]	−1.0 ± 0.0[dd]	22.2 ± 1.2	…	19 ± 2	99.9	16
J04244260-0647313	11.09 ± 0.06	9.57 ± 0.03	146.00 ± 1.00[y]	8.00 ± 2.00[y]	M4V	−11.92	4.3	…	…	22.7 ± 1.2	…	16 ± 1	99.4	16
J04464970-6034109	9.82 ± 0.05	8.55 ± 0.02	56.80 ± 1.40	109.50 ± 1.40	M1.5V	−12.00	5.3	…	…	12.1 ± 1.6	…	37 ± 2	92.3	16
J04595855-0333123	11.19 ± 0.06	9.76 ± 0.02	72.00 ± 0.00[y]	48.00 ± 1.00[y]	M4+M5.5	−12.25	5.5	…	…	24.2 ± 1.3	…	19 ± 2	90.8	16
J06134539-2352077	10.16 ± 0.06	8.37 ± 0.03	−28.00 ± 3.90	105.30 ± 1.30	M3.5+M5	−11.39	6.1	…	…	23.4 ± 1.7	…	16 ± 2	99.9[j]	16
J06380031-4056011	11.89 ± 0.05	10.35 ± 0.03	−1.00 ± 2.00	97.40 ± 1.90	M3.5V	−12.30	4.7	…	…	19.3 ± 1.8	…	35 ± 2	93.9	16
J07140101-1945332	12.31 ± 0.05	10.81 ± 0.02	−22.50 ± 4.90	25.10 ± 3.40	M4.5V	−12.15	7.0	…	…	23.0 ± 1.8	…	61 ± 6	99.9[j]	16
J07343426-2401353	12.24 ± 0.05	10.65 ± 0.02	−22.00 ± 2.00[y]	30.00 ± 4.00[y]	M3.5V	−12.29	8.2	…	…	21.7 ± 1.8	…	71 ± 5	94.2[j]	16
J08031018+2022154	10.88 ± 0.17[v]	9.24 ± 0.02	−104.00 ± 2.00[y]	−58.00 ± 3.00[y]	M3V+M4V	−11.62	…	…	35.5 ± 1.5[uu]	20.6 ± 1.3	…	25 ± 1	99.9[j]	16
J09423823-6229028	11.82 ± 0.05	10.21 ± 0.03	−150.30 ± 3.20	79.50 ± 5.30	M3.5+M3.5	−12.20	3.7	…	…	7.4 ± 1.9	…	30 ± 1	97.2	16
J09445422-1220544	10.39 ± 0.00[t]	8.50 ± 0.02	−328.80 ± 4.60[y]	33.30 ± 4.60[y]	M5V	−11.67	15.3	…	…	14.5 ± 1.7	…	12 ± 1	99.9[j]	16
J10252563-4918389	10.52 ± 0.06	9.12 ± 0.04	−182.10 ± 6.70	54.50 ± 6.40	M4V	−12.05	8.3	…	…	7.5 ± 1.9	…	27 ± 1	99.9	16
J11200609-1029468	9.27 ± 0.06	7.81 ± 0.03	−202.50 ± 1.50[y]	19.80 ± 2.70[y]	M2V	−11.64	2.4	…	…	5.2 ± 1.4	…	25 ± 1	99.9[j]	16
J12092998-7505400	11.29 ± 0.05	9.91 ± 0.02	−65.30 ± 2.50	−0.60 ± 2.50	M3V	−12.41	7.5	…	…	0.5 ± 1.8	…	78 ± 4	99.1[j]	16
J12170465-5743558	9.69 ± 0.06	8.71 ± 0.02	−92.70 ± 1.30[y]	−12.30 ± 1.30[y]	K7V	−11.63	1.4	160[k]	−1.6 ± 0.0[k]	−0.1 ± 1.8	…	53 ± 3	47.6	16
J12233860-4606203	10.96 ± 0.06	9.53 ± 0.02	−235.10 ± 6.80	−7.40 ± 7.90	M4V	−12.20	7.5	…	…	−0.8 ± 1.8	…	23 ± 1	99.9	16
J13283294-3654233	11.22 ± 0.05	9.83 ± 0.03	−192.00 ± 3.00[y]	−36.00 ± 24.00[y]	M3.5V	−12.53	3.8	…	…	−6.7 ± 1.6	…	27 ± 1	99.2	16
J13382562-2516466	10.14 ± 0.06	8.66 ± 0.02	−295.56 ± 12.10[aa]	−76.33 ± 9.40[aa]	M3.5V	−11.87	6.7	…	…	−8.6 ± 1.4	…	16 ± 1	99.9	16
J13493313-6818291	10.79 ± 0.05	9.50 ± 0.03	−51.00 ± 9.90	−26.50 ± 7.70	M2+M4+M3.5	−12.03	7.7	…	…	−3.5 ± 1.7	…	84 ± 3	96.4[j]	16
J13591045-1950034	9.90 ± 0.03[vv]	8.33 ± 0.04	−552.70 ± 5.50[cc]	−183.10 ± 5.50[cc]	M4.5V	−11.89	3.1	…	−15.8 ± 0.0[ll]	−10.9 ± 1.2	10.7 ± 0.1[vv]	8 ± 1	95.6	16
J14284804-7430205	10.46 ± 0.06	9.26 ± 0.02	−62.20 ± 1.60	−36.30 ± 1.60	M1V	−12.01	4.8	…	…	−3.4 ± 1.7	…	76 ± 3	97.0[j]	16
J14563812-6623419	11.76 ± 0.05	10.40 ± 0.03	−60.90 ± 5.20[y]	−40.40 ± 5.20[y]	M1.5V	−12.34	−0.8	…	…	−6.3 ± 1.7	…	73 ± 3	95.3[j]	16
J15163224-5855237	10.05 ± 0.05	9.10 ± 0.03	−42.80 ± 3.40[y]	−44.20 ± 3.20[y]	K7V	−11.92	1.9	…	…	−9.1 ± 1.6	…	77 ± 3	98.5	16
J15553178+3512028	10.66 ± 0.00[r]	8.93 ± 0.02	−226.00 ± 3.00[y]	156.00 ± 2.00[y]	M4+M7	−11.87	8.1	…	−15.5 ± 0.7[uu]	−17.6 ± 1.2	…	13 ± 1	99.9	16
J17115853-2530585	11.12 ± 0.06	9.90 ± 0.02	−15.10 ± 2.50	−34.00 ± 2.70	M1V	−12.11	3.1	…	…	−21.9 ± 1.3	…	65 ± 7	92.1	16
J18083702-0426259	6.78 ± 0.03[n]	5.77 ± 0.03	−8.40 ± 1.10[y]	−16.10 ± 0.70[y]	K5V	−11.92	−0.9	…	…	−25.2 ± 1.4	167.5 ± 29.5	19 ± 3	99.9[j]	16
J18202275-1011131	8.67 ± 0.00[l]	7.64 ± 0.02	10.51 ± 5.95[n]	−33.91 ± 4.03[n]	K5Ve+K7Ve	−11.67	9.8	530[k]	−13.8 ± 0.0[k]	−24.8 ± 1.4	…	34 ± 4	99.5	16
J18450097-1409053	10.25 ± 0.06	8.47 ± 0.04	46.00 ± 6.00[y]	−84.00 ± 13.00[y]	M5V	−11.74	8.8	…	…	−24.1 ± 1.4	…	16 ± 2	95.5[j]	16
J19224278-0515536	11.36 ± 0.06	9.92 ± 0.02	30.90 ± 5.20	−15.60 ± 5.20	K5V	−12.10	−1.0	…	…	−23.8 ± 1.5	…	50 ± 5	99.3[j]	16
J19432464-3722108	10.73 ± 0.06	9.20 ± 0.03	172.00 ± 8.00[y]	−182.00 ± 15.00[y]	M3.5+M6.0	−12.21	8.2	…	…	−18.1 ± 1.2	…	13 ± 1	98.8	16
J19435432-0546363	11.21 ± 0.06	9.74 ± 0.02	66.00 ± 3.00[y]	14.00 ± 3.00[y]	M4V	−12.10	5.7	…	…	−22.9 ± 1.5	…	32 ± 2	90.5	16
J20163382-0711456	9.76 ± 0.07	8.59 ± 0.03	84.60 ± 8.10	−0.60 ± 23.60	M0V+M2V	−12.35	1.7	…	…	−21.2 ± 1.5	…	33 ± 2	95.8	16
J20515256-3046329	11.41 ± 0.06	10.11 ± 0.02	104.00 ± 1.00	−48.30 ± 1.00	M1.5V	−12.55	2.3	…	…	−16.1 ± 1.1	…	34 ± 1	92.9	16
J20531465-0221218	10.65 ± 0.06	9.33 ± 0.02	189.40 ± 4.10[y]	15.10 ± 4.10[y]	M3+M4	−12.36	3.1	…	−39.9 ± 1.1[uu]	−18.9 ± 1.5	37.9 ± 5.7[uu]	18 ± 1	90.2	16
J21342935-1840372	11.72 ± 0.06	10.05 ± 0.02	79.00 ± 1.80	−11.40 ± 2.10	M4V	−12.40	10.5	…	…	−14.7 ± 1.2	…	51 ± 2	93.7[j]	16

TABLE 5 — *Continued*

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f_x)	Hα[d] (Å)	Li[e] (m Å)	v_{rad}^{meas}[f] (km s^{-1})	v_{rad}^{pred}[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
J22174316-1546452	12.39 ± 0.06	10.79 ± 0.02	110.00 ± 0.00[y]	−14.00 ± 2.00[y]	M4V	−12.52	7.5	…	…	−11.1 ± 1.1	…	42 ± 2	98.4	16
J22274882-0113527	11.06 ± 0.17[v]	9.48 ± 0.02	170.10 ± 5.40	−20.70 ± 10.90	M3.5V	−12.20	5.2	…	…	−10.7 ± 1.3	…	27 ± 1	99.9[j]	16
J22332264-0936537	10.08 ± 0.06	8.53 ± 0.02	148.00 ± 1.80	4.90 ± 1.30	M3+M3	−11.61	6.1	…	−4.4 ± 1.4[uu]	−9.9 ± 1.1	…	32 ± 1	99.9[j]	16
J22371494-2622332	10.60 ± 0.06	9.16 ± 0.03	145.30 ± 1.50	−12.80 ± 1.50	M3.5V	−11.77	7.1	…	…	−8.5 ± 0.9	…	33 ± 1	99.2[j]	16
J23205766-0147373	10.87 ± 0.00[t]	9.35 ± 0.02	171.90 ± 4.30[y]	27.90 ± 4.30[y]	M4+M4	−12.13	6.7	…	−7.2 ± 0.4[uu]	−5.1 ± 1.1	41.0 ± 2.7[uu]	29 ± 1	92.8[j]	16
J23331860+2714219	10.89 ± 0.17[v]	9.35 ± 0.02	343.20 ± 5.50[cc]	22.10 ± 5.50[cc]	M3V	−12.37	2.6	…	…	−3.6 ± 1.7	…	15 ± 1	99.3	16
J23332198-1240072	11.84 ± 0.00[t]	10.28 ± 0.02	164.20 ± 4.50[y]	9.00 ± 4.40[y]	K5V	−12.28	−1.1	…	…	−3.6 ± 0.9	…	31 ± 1	98.6	16
J23532520-7056410	10.34 ± 0.05	8.68 ± 0.02	306.70 ± 8.80[aa]	46.35 ± 8.80[aa]	M3.5V	−12.22	4.8	…	0.6 ± 2.4[kk]	0.0 ± 1.3	…	17 ± 1	92.2[j]	16
J23555512-1321238	10.72 ± 0.00[t]	9.26 ± 0.02	308.80 ± 4.40[y]	12.50 ± 4.40[y]	M2.5V	−12.41	7.4	…	−9.0 ± 2.8[kk]	−1.1 ± 0.8	…	18 ± 1	97.3	16
J23572056-1258487	10.18 ± 0.00[r]	8.64 ± 0.02	201.40 ± 4.50[y]	17.40 ± 4.50[y]	M4V	−11.76	4.3	…	17.4 ± 0.0[ll]	−1.0 ± 0.8	…	25 ± 1	99.9[j]	16
J23581366-1724338	9.62 ± 0.00[t]	8.31 ± 0.02	221.20 ± 4.20[y]	15.40 ± 4.20[y]	M2+M2	−11.68	4.8	…	−8.7 ± 1.8[uu]	−0.8 ± 0.7	39.1 ± 5.3[uu]	24 ± 1	99.2	16
AB Doradus moving group														
J00340843+2523498	9.37 ± 0.17[v]	8.48 ± 0.03	83.40 ± 1.60	−98.20 ± 1.40	K7Ve*	−11.90	2.1[oo]	…	−12.4 ± 2.0[oo]	−8.1 ± 1.7	…	50 ± 2	98.9	11
J01034210+4051158	10.50 ± 0.00[u]	9.37 ± 0.04	118.60 ± 4.00[y]	−162.30 ± 4.00[y]	M2.6+M3.8	−11.50	1.9	…	−10.9 ± 0.4[uu]	−11.6 ± 1.5	29.9 ± 2.0[uu]	33 ± 1	65.7	14
J01123504+1703557	11.74 ± 0.17[v]	10.21 ± 0.02	92.00 ± 1.00[y]	−98.00 ± 1.00[y]	M3V	−12.31	5.7	…	…	−1.6 ± 1.8	…	48 ± 2	96.9[j]	16
J01132958-0738088	10.39 ± 0.05	9.36 ± 0.02	69.40 ± 1.20	−67.40 ± 1.20	K7V+M5.5	−12.03	2.1	…	…	8.6 ± 2.1	…	64 ± 2	97.0	16
J01225093-2439505	11.48 ± 0.06	10.08 ± 0.03	120.10 ± 2.60	−121.50 ± 1.70	M3.5V	−12.46	9.7	…	…	15.5 ± 2.1	…	33 ± 1	99.9	16
J01372322+2657119	9.26 ± 0.17[v]	8.43 ± 0.02	116.70 ± 1.10[y]	−129.20 ± 0.70[y]	K5Ve	−11.70	…	…	−5.9 ± 3.0[oo]	−3.7 ± 1.7	…	37 ± 1	98.1	11
J02523096-1548357	12.21 ± 0.17[v]	10.54 ± 0.02	78.00 ± 3.00[y]	−92.00 ± 3.00[y]	M2.5V	−12.64	4.0	…	…	19.4 ± 2.0	…	42 ± 2	99.9[j]	16
J02545247-0709255	11.46 ± 0.17[v]	10.00 ± 0.03	44.00 ± 2.00[y]	−62.00 ± 4.00[y]	M3V	−12.37	3.5	…	…	16.6 ± 1.9	…	71 ± 4	95.2[j]	16
J04084031-2705473	12.42 ± 0.06	10.81 ± 0.02	52.00 ± 1.90	−96.00 ± 1.40	M4V	−12.32	3.6	…	…	26.7 ± 1.8	…	30 ± 2	99.9	16
J04093930-2648489	10.65 ± 0.06	9.51 ± 0.03	47.20 ± 0.90	−77.80 ± 0.90	M1.5V	−12.11	2.8	…	…	26.7 ± 1.8	…	37 ± 3	98.1	16
J04141730-0906544	11.09 ± 0.05	9.63 ± 0.02	96.00 ± 6.00[y]	−138.00 ± 3.00[y]	M3.5V	−11.80	6.1	78[hh]	…	21.8 ± 1.7	…	28 ± 1	99.2	16
J04353618-2527347	9.74 ± 0.00[t]	8.24 ± 0.02	78.40 ± 7.40	−182.40 ± 9.90	M3.5V	−11.79	5.2	…	…	27.4 ± 1.7	…	15 ± 1	99.9[j]	16
J04424932-1452268	11.71 ± 0.06	10.24 ± 0.03	42.00 ± 3.00[y]	−132.00 ± 3.00[y]	M4V	−12.24	14.8	…	…	24.9 ± 1.7	…	29 ± 2	99.9	16
J04514615-2400087	11.87 ± 0.06	10.56 ± 0.03	41.80 ± 1.20	−56.90 ± 1.50	M3V	−12.29	7.3	…	…	27.6 ± 1.7	…	45 ± 4	98.9	16
J04522441-1649219	9.10 ± 0.00[t]	7.74 ± 0.02	123.40 ± 3.40[y]	−210.60 ± 3.50[y]	M3Ve*	−11.51	6.3	20[ii]	26.7 ± 1.5[oo]	25.7 ± 1.6	16.3 ± 0.4[uu]	16 ± 1	99.9[j]	7,11
J04554034-1917553	10.91 ± 0.05	9.78 ± 0.02	21.80 ± 1.60	−66.10 ± 1.60	M0.5V	−12.20	4.4	…	…	26.5 ± 1.6	…	49 ± 4	98.3	16
J04571728-0621564	10.55 ± 0.05	9.51 ± 0.02	18.00 ± 2.00[y]	−92.00 ± 5.00[y]	M0.5V	−12.33	3.1	…	23.2 ± 0.6[o]	22.5 ± 1.6	…	49 ± 3	96.2	16
J05130132-7027418	10.77 ± 0.05	9.21 ± 0.03	127.30 ± 12.50[z]	246.00 ± 12.50[z]	M3.5+M5.5	−11.96	7.9	…	…	28.7 ± 1.6	…	10 ± 1	91.6	16
J05254166-0909123	9.91 ± 0.00[t]	8.45 ± 0.03	39.90 ± 4.60[y]	−189.70 ± 4.60[y]	M3.5+M4	−11.82	3.3	…	28.4 ± 0.5[uu]	24.1 ± 1.5	20.7 ± 2.2[uu]	21 ± 1	99.9[j]	16
J05531299-4505119	9.67 ± 0.00[k]	8.60 ± 0.03	32.80 ± 1.40[y]	−4.90 ± 1.40[y]	M0.5V	−11.94	1.4	140[k]	31.7 ± 0.0[k]	31.3 ± 1.6	…	34 ± 4	98.7	16
J06022455-1634494	10.07 ± 0.05	8.99 ± 0.03	−6.80 ± 1.60	−64.60 ± 1.30	M0V	−12.09	2.2	…	…	26.9 ± 1.5	…	50 ± 4	97.7	16
J06091922-3549311	9.35 ± 0.06	7.92 ± 0.02	−5.60 ± 0.90	−56.60 ± 0.90	M0.5V+L4	−11.56	3.4	10[k]	31.4 ± 0.4[k]	30.7 ± 1.5	21.3 ± 1.4[yy]	22 ± 4	99.9[j]	7
J06373215-2823125	10.89 ± 0.07	9.60 ± 0.02	−20.80 ± 2.30	−47.20 ± 2.00	M2.5V	−12.38	3.5	…	…	29.5 ± 1.4	…	42 ± 5	99.0	16
J07115917-3510157	10.96 ± 0.05	9.63 ± 0.02	−28.60 ± 1.20	−57.90 ± 1.60	M3V+M3V	−12.14	4.8	…	…	30.1 ± 1.4	…	29 ± 4	99.9	16
J10121768-0344441	7.08 ± 0.00[n]	5.89 ± 0.02	−152.90 ± 1.30[y]	−242.90 ± 1.00[y]	M1.5V	−12.51	−0.4	…	9.0 ± 1.4[jj]	12.1 ± 1.7	7.9 ± 0.1	19 ± 1	87.0[j]	16
J11254754-4410267	11.91 ± 0.05	10.34 ± 0.03	−84.50 ± 2.70	−57.70 ± 7.70	M4+M4.5	−11.74	10.7	−30[xx]	19.5 ± 2.0[xx]	19.2 ± 1.4	…	49 ± 3	54.4[j]	13
J12194808+5246450	9.25 ± 0.17[v]	8.28 ± 0.02	−169.94 ± 1.90[n]	−121.50 ± 1.79[n]	K7V	−12.36	0.0	…	−4.9 ± 1.2[qq]	−18.9 ± 2.0	28.0 ± 1.7	25 ± 1	95.0	14
J12383713-2703348	10.07 ± 0.05	8.73 ± 0.04	−172.00 ± 3.00[y]	−188.00 ± 6.00[y]	M2.5V	−12.06	3.1	…	…	8.4 ± 1.7	…	25 ± 1	99.3	16
J12574030+3513306	8.84 ± 0.02[n]	7.40 ± 0.02	−264.16 ± 2.95[n]	−176.16 ± 2.26[n]	M4V	−11.22	1.4[ll]	…	−9.5 ± 0.6[ss]	−16.8 ± 2.1	19.3 ± 1.1	17 ± 1	99.9[j]	14
J13545390-7121476	9.80 ± 0.06	8.55 ± 0.02	−165.00 ± 6.50	−132.70 ± 6.80	M2.5V	−12.02	3.3	…	…	19.1 ± 1.4	…	24 ± 1	91.0	16
J14190331+6451463	11.98 ± 0.17[v]	10.39 ± 0.02	−104.00 ± 2.00[y]	12.00 ± 2.00[y]	M3V	−12.43	11.2	…	…	−25.8 ± 1.9	…	35 ± 2	98.3[j]	16
J15244849-4929473	9.45 ± 0.06	8.16 ± 0.03	−121.10 ± 3.00[y]	−238.90 ± 2.70[y]	M2V	−12.49	0.5	…	6.7 ± 0.9[o]	7.5 ± 1.4	…	23 ± 1	95.1[j]	16
J15594729+4403595	9.76 ± 0.17[v]	8.51 ± 0.02	−71.90 ± 0.90[y]	−11.20 ± 1.10[y]	M1V	−11.83	3.3	…	…	−28.9 ± 1.8	…	33 ± 4	92.8[j]	16

TABLE 5 — *Continued*

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f_x)	Hα[d] (Å)	Li[e] (m Å)	v_{rad}^{meas}[f] (km s^{-1})	v_{rad}^{pred}[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
J16074132-1103073	11.29 ± 0.06	9.82 ± 0.02	−64.00 ± 4.00[y]	−148.00 ± 5.00[y]	M4V	−12.45	7.1	…	…	−13.3 ± 1.6	…	36 ± 2	98.4[j]	16
J16232165+6149149	11.62 ± 0.17[v]	10.06 ± 0.02	−42.00 ± 0.00[y]	54.00 ± 2.00[y]	M2.5+M3.5	−12.32	5.6	…	…	−29.4 ± 1.7	…	28 ± 4	93.9	16
J17520294+5636278	10.73 ± 0.17[v]	9.23 ± 0.02	−50.00 ± 2.00[y]	56.00 ± 2.00[y]	M3.5V	−12.25	…	…	…	−31.0 ± 1.6	…	16 ± 3	99.9	16
J18553176-1622495	10.26 ± 0.06	9.13 ± 0.03	32.60 ± 4.70	−175.60 ± 4.70	M0.5V	−12.21	4.2	…	…	−13.4 ± 1.4	…	34 ± 1	98.5	16
J19420065-2104051	10.31 ± 0.00[t]	8.69 ± 0.02	48.00 ± 1.00[y]	−276.00 ± 1.00[y]	M3.5V	−12.45	2.6	…	…	−9.9 ± 1.5	…	21 ± 1	97.4[j]	16
J20220177-3653014	12.31 ± 0.06	10.71 ± 0.02	72.00 ± 13.00[y]	−188.00 ± 29.00[y]	M4.5V	−12.48	5.8	…	…	−0.3 ± 1.7	…	33 ± 1	99.4	16
J20223306-2927499	11.81 ± 0.06	10.41 ± 0.02	32.00 ± 2.00[y]	−104.00 ± 1.00[y]	M3.5V	−12.30	9.4	…	…	−4.1 ± 1.6	…	58 ± 2	95.6[j]	16
J20465795-0259320	10.15 ± 0.05	9.12 ± 0.03	59.10 ± 2.40	−108.40 ± 2.40	M0V	−12.22	1.6	…	−13.8 ± 0.9[o]	−15.3 ± 1.6	…	47 ± 2	99.2	16
J21130526-1729126	9.22 ± 0.00[k]	8.35 ± 0.03	74.40 ± 0.80	−145.10 ± 0.80	K6Ve	−12.07	0.1[k]	20[k]	−7.4 ± 0.0[k]	−7.2 ± 1.7	…	39 ± 1	99.9	7
J21521039+0537356	9.75 ± 0.00[w]	8.25 ± 0.03	119.17 ± 7.95[n]	−150.29 ± 4.89[n]	M2Ve*	−11.68	4.2[hh]	10[dd]	−15.1 ± 1.5[uu]	−14.3 ± 1.7	30.5 ± 5.3	28 ± 1	91.1[j]	7
J23320018-3917368	10.28 ± 0.06	8.90 ± 0.03	189.50 ± 4.20	−183.70 ± 7.90	M3V	−11.63	5.7	…	11.6 ± 0.7[o]	11.9 ± 2.1	…	23 ± 1	99.9	16
J23513366+3127229	11.35 ± 0.17[v]	9.82 ± 0.02	108.00 ± 1.00[y]	−84.00 ± 1.00[y]	M2V+L0	−12.18	3.2	78[hh]	−13.5 ± 0.6[tt]	−13.8 ± 1.6	…	42 ± 2	95.1[j]	15
Ambiguous candidate members														
J00281434-3227556	11.86 ± 0.06[o]	10.12 ± 0.02	108.00 ± 3.80	−42.60 ± 2.10	M5V	−12.30	10.6	…	…	···	···	···	···	16
J00551501+3015156	11.43 ± 0.17[v]	10.05 ± 0.02	74.00 ± 3.00[y]	−36.00 ± 2.00[y]	M2V	−12.28	3.6	…	…	···	···	···	···	16
J01071194-1935359	9.43 ± 0.06	8.15 ± 0.02	63.10 ± 1.20	−39.80 ± 1.20	M0.5V+M2.5	−11.58	2.9	302[ff]	11.5 ± 1.4[ff]	···	···	···	···	12
J01132817-3821024	9.66 ± 0.07[o]	8.49 ± 0.02	123.00 ± 1.10	−38.30 ± 1.20	M0.0+M1.0	−11.77	2.5	…	…	···	···	···	···	16
J01484087-4830519	10.42 ± 0.06	9.19 ± 0.03	111.20 ± 1.20	−51.00 ± 1.20	M1.5V	−11.96	3.1	…	…	···	···	···	···	16
J02001277-0840516	10.05 ± 0.05	8.77 ± 0.02	108.00 ± 3.00[y]	−62.00 ± 2.00[y]	M2.5V	−11.84	4.2	…	…	···	···	···	···	16
J02155892-0929121	9.80 ± 0.06	8.43 ± 0.03	92.00 ± 3.00[y]	−38.00 ± 5.00[y]	M2.5+M5+M8	−11.71	6.9	…	…	···	···	···	···	16
J02224418-6022476	10.51 ± 0.05	8.99 ± 0.02	136.90 ± 1.70	−14.40 ± 1.70	M4V	−11.53	8.1	…	…	···	···	···	···	16
J02365171-5203036	9.78 ± 0.00[k]	8.42 ± 0.02	102.60 ± 0.80	0.80 ± 0.80	M2Ve	−11.57	5.8	380[k]	16.0 ± 0.1[k]	···	···	···	···	5
J02442137+1057411	9.31 ± 0.04[n]	7.97 ± 0.02	68.43 ± 3.14[n]	−37.36 ± 2.44[n]	M0Ve	−11.70	3.4[nn]	…	…	···	34.9 ± 3.7	···	···	8
J02564708-6343027	11.32 ± 0.06	9.86 ± 0.03	67.40 ± 1.70	8.80 ± 3.80	M4V	−12.26	9.4	…	…	···	···	···	···	16
J03494535-6730350	10.85 ± 0.05	9.85 ± 0.02	41.60 ± 1.00	19.50 ± 1.00	K7V	−12.30	1.7	…	16.3 ± 3.2[kk]	···	···	···	···	16
J04082685-7844471	10.31 ± 0.05	9.28 ± 0.02	55.70 ± 2.30	42.80 ± 1.40	M0V	−12.13	2.7	…	…	···	···	···	···	16
J04363294-7851021	12.53 ± 0.05	10.98 ± 0.02	32.80 ± 2.80	47.40 ± 2.70	M4V	−12.19	14.1	…	…	···	···	···	···	16
J04365738-1613065	10.53 ± 0.06	9.12 ± 0.03	70.00 ± 5.00[y]	−26.00 ± 4.00[y]	M3.5V	−11.54	5.1	…	…	···	···	···	···	16
J05090356-4209199	11.01 ± 0.06	9.58 ± 0.02	27.90 ± 1.70	58.80 ± 2.20	M3.5V	−12.16	8.2	…	…	···	···	···	···	16
J05142736-1514514	12.05 ± 0.05	10.71 ± 0.04	36.00 ± 6.00[y]	−16.00 ± 2.00[y]	M3.5V	−12.14	9.7	…	…	···	···	···	···	16
J05142878-1514546	12.44 ± 0.06	10.95 ± 0.02	34.10 ± 8.10[y]	−14.20 ± 8.00[y]	M3.5V	−12.14	5.7	…	…	···	···	···	···	16
J05195582-1124568	11.71 ± 0.06	10.10 ± 0.02	24.00 ± 3.00[y]	−20.00 ± 3.00[y]	M3V	−12.19	9.0	…	…	···	···	···	···	16
J05240991-4223054	11.74 ± 0.06	10.58 ± 0.02	4.90 ± 1.90	−13.30 ± 2.50	M0.5V	−12.34	2.8	…	…	···	···	···	···	16
J05301858-5358483	9.72 ± 0.06	7.91 ± 0.02	207.50 ± 9.00[y]	387.10 ± 9.00[y]	M3+M6+M4	−11.68	3.9	…	…	···	···	···	···	16
J05381615-6923321	10.14 ± 0.06	8.96 ± 0.02	65.50 ± 4.40	108.90 ± 4.40	M0.5V	−11.58	2.9	…	…	···	···	···	···	16
J05392505-4245211	10.72 ± 0.06	9.45 ± 0.02	40.60 ± 1.20	15.90 ± 3.00	M2V	−11.91	3.5	…	…	···	···	···	···	16
J05471788-2856130	11.60 ± 0.06	10.08 ± 0.02	17.20 ± 3.30	30.20 ± 2.20	M3.5V	−12.09	8.2	…	…	···	···	···	···	16
J06153953-8433115	10.60 ± 0.05	9.25 ± 0.03	−32.20 ± 1.40	107.00 ± 1.30	M3V	−12.00	5.1	…	…	···	···	···	···	16
J06262932-0739540	11.18 ± 0.06	9.93 ± 0.02	9.30 ± 7.90	−17.80 ± 7.80	M1V	−12.30	4.7	…	…	···	···	···	···	16
J06434532-6424396	10.67 ± 0.09	9.29 ± 0.02	2.30 ± 2.40	54.50 ± 2.40	M4+M3+M5	−11.97	6.3	…	…	···	···	···	···	16
J06475229-2523304	9.79 ± 0.06	8.35 ± 0.02	22.40 ± 1.10[y]	−70.30 ± 1.30[y]	K7V	−11.68	1.1	60[k]	−56.5 ± 0.0[k]	···	···	···	···	16
J07170438-6311123	11.02 ± 0.06	9.73 ± 0.02	−13.10 ± 1.50	48.00 ± 1.40	M2V	−12.39	3.8	…	…	···	···	···	···	16
J07310129+4600266	11.64 ± 0.17[v]	9.95 ± 0.02	−12.00 ± 4.00[y]	−98.00 ± 2.00[y]	M4V	−11.96	…	…	…	···	···	···	···	16
J07504838-2931126	11.37 ± 0.06	9.83 ± 0.02	−82.10 ± 1.70	24.50 ± 3.30	M4V	−11.56	22.1	…	…	···	···	···	···	16
J08224744-5726530	10.29 ± 0.06	8.63 ± 0.02	−481.40 ± 9.00[y]	159.00 ± 9.00[y]	M4.5+ >L0	−11.97	7.3	…	…	···	···	···	···	16
J08412528-5736021	10.94 ± 0.05	9.58 ± 0.03	−20.70 ± 3.70	26.50 ± 2.00	M3V+M3V	−11.95	9.4	…	…	···	···	···	···	16

TABLE 5 — *Continued*

Name (2MASS)	I[a] (mag)	J (mag)	$\mu_\alpha \cos\delta$[b] (mas yr^{-1})	μ_δ[b] (mas yr^{-1})	Spt	X-ray[c] log(f$_x$)	Hα[d] (Å)	Li[e] (m Å)	v_{rad}^{meas}[f] (km s^{-1})	v_{rad}^{pred}[g] (km s^{-1})	d_π[h] (pc)	d_s[g] (pc)	P[i] (%)	Refs.
J08465879-7246588	9.53 ± 0.06	8.49 ± 0.02	−73.20 ± 0.90	55.80 ± 1.00	K7V	−12.25	1.7	20[k]	−6.0 ± 0.0[k]	···	···	···	···	16
J09032434-6348330	10.77 ± 0.06	9.57 ± 0.03	−34.50 ± 1.40	35.40 ± 1.40	M0.5V	−12.09	2.9	…	…	···	···	···	···	16
J09315840-6209258	11.42 ± 0.06	9.95 ± 0.02	−38.40 ± 4.20	18.60 ± 2.80	M3.5V	−11.96	9.1	…	…	···	···	···	···	16
J09353126-2802552	9.85 ± 0.06	8.51 ± 0.02	−49.40 ± 0.60	−57.40 ± 0.70	K7V	−11.68	2.1	20[k]	1.5 ± 0.0[k]	···	···	···	···	16
J11091606-7352465	11.22 ± 0.06	9.86 ± 0.03	−53.30 ± 1.90	10.30 ± 1.90	M3V	−12.10	6.2	…	…	···	···	···	···	16
J11455177-5520456	9.03 ± 0.06	8.02 ± 0.03	−97.70 ± 1.60[y]	−5.80 ± 1.50[y]	K5Ve	−11.44	0.4[k]	190[k]	16.1 ± 0.0[k]	···	···	···	···	7
J12103101-7507205	12.70 ± 0.06	11.19 ± 0.03	−66.50 ± 3.50	−5.80 ± 7.70	M4V	−12.54	8.4	…	…	···	···	···	···	16
J12242443-5339088	12.17 ± 0.05	10.51 ± 0.02	−180.00 ± 2.00[y]	−60.00 ± 4.00[y]	M5V	−12.34	9.8	…	…	···	···	···	···	16
J13213722-4421518	10.99 ± 0.06	9.74 ± 0.02	−34.90 ± 1.20	−18.80 ± 3.50	M0.5V	−12.20	4.5	464	6.9 ± 3.0[q]	···	···	···	···	5
J17165072-3007104	11.78 ± 0.06	10.37 ± 0.03	−8.00 ± 3.00[y]	−36.00 ± 2.00[y]	M2.5V	−12.24	7.1	…	…	···	···	···	···	16
J17243644-3152484	10.06 ± 0.06	9.00 ± 0.02	−7.00 ± 1.30	−34.60 ± 1.60	K7V	−11.97	2.2	…	…	···	···	···	···	16
J17261525-0311308	11.99 ± 0.06	10.38 ± 0.02	−29.70 ± 9.00[y]	−112.10 ± 9.00[y]	M4.5V	−12.40	11.1	…	…	···	···	···	···	16
J17275761-4016243	11.65 ± 0.06	10.04 ± 0.02	−13.10 ± 3.30	−50.40 ± 3.30	M4V	−12.36	6.8	…	…	···	···	···	···	16
J17300060-1840132	11.33 ± 0.06	9.92 ± 0.02	−8.10 ± 2.80	−39.30 ± 9.00	M3.5V	−12.29	5.2	…	…	···	···	···	···	16
J17580616-2222238	11.04 ± 0.06	9.72 ± 0.02	−5.90 ± 3.00	−44.10 ± 2.30	M1V	−12.23	5.1	…	…	···	···	···	···	16
J18141047-3247344	9.16 ± 0.07	8.07 ± 0.02	3.30 ± 1.70	−52.00 ± 1.30	K6Ve(sb2)	−11.66	60.0[gg]	440[ii]	…	···	···	···	···	6
J20072376-5147272	9.07 ± 0.00[k]	8.16 ± 0.02	86.90 ± 0.70	−145.30 ± 1.10	K6Ve	−11.39	1.0[k]	60[k]	−13.3 ± 0.0[k]	···	···	···	···	7
J21334415-3453372	11.47 ± 0.06	10.24 ± 0.02	40.40 ± 1.30	−72.50 ± 1.30	M1.5V	−12.35	5.6	…	…	···	···	···	···	16
J21464282-8543046	10.43 ± 0.05	8.84 ± 0.02	184.00 ± 5.00[y]	−212.00 ± 32.00[y]	M3.5V	−11.67	12.7	…	…	···	···	···	···	16
J22294830-4858285	12.74 ± 0.06	11.21 ± 0.02	111.90 ± 2.90	−64.10 ± 3.00	M4.5V	−12.46	5.8	…	…	···	···	···	···	16
J22440873-5413183	10.71 ± 0.06	9.36 ± 0.03	70.90 ± 9.10	−60.10 ± 8.30	M4V	−11.97	6.1	…	−7.7 ± 4.7[kk]	···	···	···	···	16
J22470872-6920447	9.79 ± 0.06	8.89 ± 0.02	71.90 ± 1.40	−59.90 ± 1.40	K6Ve	−12.32	0.1[k]	0[k]	−2.2 ± 0.0[k]	···	···	···	···	11
J23495365+2427493	11.53 ± 0.17[v]	9.90 ± 0.02	130.00 ± 6.00[y]	−40.00 ± 3.00[y]	M3.5+M4.5	−12.28	4.7	…	…	···	···	···	···	16
Other previously proposed candidate members														
J00233468+2014282	9.05 ± 0.17[v]	8.14 ± 0.02	61.40 ± 1.80	−38.30 ± 2.00	K7.5V	−11.87	0.7[nn]	…	−5.0 ± 1.5[nn]	···	…	···	···	8
J09361593+3731456	9.03 ± 0.17[v]	8.09 ± 0.02	−99.44 ± 2.45[n]	−89.51 ± 1.42[n]	M2+M2	−12.26	…	…	−2.5 ± 1.0[ww]	···	33.7 ± 2.6	···	···	14
J12151838-0237283	9.82 ± 0.06	8.67 ± 0.03	−86.00 ± 2.90	−113.00 ± 1.90	M0Ve	−12.18	1.5[oo]	…	1.4 ± 4.6[kk]	···	…	···	···	11
J12210499-7116493	10.09 ± 0.06	9.09 ± 0.02	−44.20 ± 1.50	−12.40 ± 1.60	K7V	−11.82	2.1	550[ff]	8.1 ± 0.6[ff]	···	…	···	···	12
J12342047-4815195	11.81 ± 0.00[p]	10.49 ± 0.04	68.10 ± 9.00[y]	95.60 ± 9.00[y]	M2V	−11.91	10.5[p]	484	10.0 ± 1.7[ee]	···	…	···	···	5
J12342064-4815135	11.94 ± 0.00[p]	10.56 ± 0.03	68.10 ± 9.00[y]	95.60 ± 9.00[y]	M1.5V	−11.91	9.0[p]	494	11.2 ± 2.0[q]	···	…	···	···	5
J16430128-1754274	10.61 ± 0.06	9.44 ± 0.03	−27.80 ± 1.40	−52.40 ± 1.50	M0.5V	−12.09	3.2	300[ff]	−11.3 ± 3.5[kk]	···	…	···	···	12
J22424884+1330532	9.30 ± 0.17[v]	8.63 ± 0.02	73.70 ± 1.80[y]	−41.20 ± 2.00[y]	K5Ve*	−11.76	1.5[oo]	…	−14.9 ± 1.5[oo]	···	…	···	···	11

TABLE 5 — *Continued*

Name (2MASS)	I^{a} (mag)	J (mag)	$\mu_\alpha \cos\delta^{b}$ (mas yr^{-1})	$\mu_\delta{}^{b}$ (mas yr^{-1})	Spt	X-ray[c] log(f_x)	Hα[d] (Å)	Li[e] (m Å)	$v_{rad}^{meas\,f}$ (km s^{-1})	$v_{rad}^{pred\,g}$ (km s^{-1})	$d_\pi{}^{h}$ (pc)	$d_s{}^{g}$ (pc)	P[i] (%)	Refs.

REFERENCES. — (1) Kastner et al. 1997; (2) Webb et al. 1999; (3) Torres et al. 2000; (4) Zuckerman et al. 2001b; (5) Zuckerman & Song 2004; (6) Torres et al. 2006; (7) Torres et al. 2008; (8) Lépine & Simon 2009; (9) Ortega et al. 2009; (10) Looper et al. 2010; (11) Schlieder et al. 2010; (12) Kiss et al. 2011; (13) Rodriguez et al. 2011; (14) Schlieder et al. 2012a ; (15) Bowler et al. 2012 ; (16) this work.

NOTE. — (k) Torres et al. 2006; (l) magnitude without binary correction; Torres et al. 2006; (m) ; (n) van Leeuwen 2007; (o) this work; (p) Zuckerman et al. 2001c; (q) Reid et al. 2003; (r) Reid & Cruz 2002; (s) Koen et al. 2010; (t) Casagrande et al. 2008; (u) Reid et al. 2004; (v) SDSS-DR8; Adelman-McCarthy & et al. 2011; (w) Weis 1991; (x) Koen et al. 2002; (y) NOMAD; Zacharias et al. 2005; (z) PPMXL; Roeser et al. 2010; (aa) PPMX; Roeser et al. 2008; (bb) Looper et al. 2010; (cc) Salim & Gould 2003; (dd) Zickgraf et al. 2005; (ee) Shkolnik et al. 2011; (ff) Kiss et al. 2011; (gg) Herbig & Bell 1988; (hh) Shkolnik et al. 2009; (ii) da Silva et al. 2009; (jj) Kharchenko et al. 2007; (kk) RAVE; Zwitter et al. 2008; (ll) Gizis et al. 2002; (mm) Hipparcos; Anderson & Francis 2012; (nn) Lépine & Simon 2009; (oo) Schlieder et al. 2010; (pp) Jayawardhana et al. 2006; (qq) Upgren & Harlow 1996; (rr) Hawley et al. 1996; (ss) Schlieder et al. 2012a; (tt) Bowler et al. 2012; (uu) Shkolnik et al. 2012; (vv) Riedel (inprep); (ww) Schlieder et al. 2012b; (xx) Rodriguez et al. 2011; (yy) Wahhaj et al. 2011.

[a] I_c magnitude from *DENIS* catalog (Epchtein et al. 1997), unless stated otherwise.
[b] Proper motion from *UCAC*3 catalog (Zacharias et al. 2009), unless stated otherwise.
[c] ROSAT X-ray flux calculated from Riaz et al. (see Section 5.4; 2006) in erg s^{-1} cm^{-2}.
[d] Hα EW from Riaz et al. (2006), unless stated otherwise.
[e] Lithium EW from Mentuch et al. (2008), unless stated otherwise. Negative value means lower limit on the Lithium EW.
[f] Radial velocity measurement from Montes et al. (2001), unless stated otherwise.
[g] Radial velocity and statistical distance derived by our analysis (see Section 5).
[h] Trigonometric distance from van Leeuwen (2007), unless stated otherwise.
[i] Membership probability without considering the RV or parallax information (see Section 5).
[j] Membership probability for which the binary hypothesis is higher.

TABLE 6
AMBIGUOUS CANDIDATE MEMBERS OF YOUNG KINEMATIC GROUPS[a]

Name	Group	P (%)	d_s (pc)	v_{rad}^{pred} (km s^{-1})
J00281434-3227556	β PMG	88.7 [b]	33 ± 3	8.4 ± 1.5
...	THA	10.3 [b]	38 ± 2	0.4 ± 1.3
J00551501+3015156	β PMG	9.9	52 ± 4	–1.2 ± 1.6
...	COL	80.2 [b]	61 ± 2	–6.1 ± 1.1
J01071194-1935359	β PMG	9.1 [b]	43 ± 4	9.3 ± 1.5
...	THA	1.6 [b]	52 ± 3	0.6 ± 1.3
...	COL	85.2 [b]	68 ± 3	5.5 ± 0.9
J01132817-3821024	β PMG	22.2	29 ± 2	11.9 ± 1.5
...	THA	58.6	36 ± 2	4.7 ± 1.3
...	COL	19.0	38 ± 1	9.3 ± 0.9
J01484087-4830519	THA	77.0	38 ± 2	8.5 ± 1.4
...	ABDMG	23.0	36 ± 2	23.1 ± 2.0
J02001277-0840516	β PMG	13.4	31 ± 2	11.4 ± 1.6
...	THA	12.4	38 ± 2	3.0 ± 1.4
...	COL	74.2	40 ± 1	8.1 ± 0.9
J02155892-0929121	β PMG	35.4	34 ± 3	12.6 ± 1.7
...	THA	23.5 [b]	44 ± 3	4.5 ± 1.4
...	COL	41.1 [b]	48 ± 2	9.7 ± 0.9
J02224418-6022476	THA	67.4 [b]	32 ± 2	11.3 ± 1.5
...	CAR	3.6 [b]	29 ± 1	16.1 ± 0.4
...	ABDMG	28.9 [b]	26 ± 2	25.8 ± 1.9
J02365171-5203036	β PMG	9.2	29 ± 2	16.3 ± 1.5
...	THA	62.4 [b]	39 ± 2	11.5 ± 1.5
...	COL	28.3 [b]	39 ± 2	15.8 ± 1.0
J02442137+1057411	β PMG	26.1 [b]	46 ± 3	10.4 ± 1.8
...	THA	9.7 [b]	56 ± 3	2.9 ± 1.4
...	COL	56.1 [b]	63 ± 2	7.6 ± 1.0
J02564708-6343027	THA	82.9 [b]	53 ± 3	12.7 ± 1.6
...	COL	1.4 [b]	58 ± 3	16.2 ± 1.0
...	ABDMG	15.6 [b]	47 ± 4	27.0 ± 1.8
J03494535-6730350	THA	2.1	66 ± 4	14.2 ± 1.6
...	COL	12.9	81 ± 4	17.4 ± 1.1
...	ABDMG	80.0	61 ± 6	28.1 ± 1.7
J04082685-7844471	THA	26.5	55 ± 3	13.2 ± 1.7
...	CAR	71.0	54 ± 1	17.0 ± 0.5
...	ABDMG	1.8	50 ± 4	26.3 ± 1.6
J04363294-7851021	β PMG	7.4	49 ± 5	14.3 ± 1.5
...	COL	7.2 [b]	69 ± 3	15.8 ± 1.1
...	ABDMG	84.0 [b]	57 ± 5	26.5 ± 1.6
J04365738-1613065	β PMG	3.0	24 ± 3	20.0 ± 1.8
...	THA	48.6 [b]	47 ± 3	16.2 ± 1.5
...	COL	48.3 [b]	39 ± 2	20.9 ± 1.0
J05090356-4209199	β PMG	27.3	26 ± 4	21.0 ± 1.5
...	ARG	72.5 [b]	52 ± 4	18.5 ± 1.5
J05142736-1514514	THA	12.8	67 ± 5	18.3 ± 1.6
...	COL	86.6	58 ± 4	22.5 ± 1.0
J05142878-1514546	THA	11.9 [b]	68 ± 6	18.3 ± 1.6
...	COL	87.1	61 ± 5	22.5 ± 1.0
J05195582-1124568	β PMG	24.0	39 ± 7	20.3 ± 1.8
...	COL	75.9 [b]	72 ± 6	22.2 ± 1.0
J05240991-4223054	ABDMG	89.4	53 ± 9	30.9 ± 1.6
J05301858-5358483	β PMG	78.4	5 ± 1	19.9 ± 1.4
...	COL	12.0	6 ± 1	22.2 ± 1.1
...	ABDMG	6.8	3 ± 1	31.0 ± 1.6
J05381615-6923321	COL	19.9	28 ± 1	19.0 ± 1.1
...	ABDMG	73.9	21 ± 2	29.1 ± 1.6
J05392505-4245211	THA	31.4	52 ± 5	20.1 ± 1.7
...	COL	68.3	41 ± 4	23.7 ± 1.1
J05471788-2856130	β PMG	86.8	24 ± 5	21.7 ± 1.6
...	ARG	10.0 [b]	53 ± 6	22.3 ± 1.6
J06153953-8433115	β PMG	75.7	33 ± 3	12.8 ± 1.5
...	ABDMG	22.8 [b]	35 ± 2	25.2 ± 1.5
J06262932-0739540	COL	89.4	81 ± 8	23.2 ± 1.1

TABLE 6 — *Continued*

Name	Group	P (%)	d_s (pc)	v_{rad}^{pred} (km s^{-1})
J06434532-6424396	COL	38.2 [b]	55 ± 3	20.8 ± 1.1
...	CAR	54.0 [b]	52 ± 3	21.9 ± 0.5
...	ABDMG	7.4 [b]	33 ± 4	30.0 ± 1.5
J06475229-2523304	COL	75.2	10 ± 2	25.1 ± 1.1
...	ABDMG	21.5 [b]	30 ± 4	28.8 ± 1.4
J07170438-6311123	β PMG	2.1	49 ± 5	17.7 ± 1.3
...	COL	75.8	58 ± 4	21.0 ± 1.1
...	CAR	1.1	50 ± 3	22.2 ± 0.5
...	ABDMG	20.0	35 ± 5	29.9 ± 1.5
J07310129+4600266	COL	81.6 [b]	51 ± 2	6.0 ± 1.0
...	ABDMG	11.4 [b]	64 ± 2	–2.9 ± 1.6
J07504838-2931126	β PMG	75.9	23 ± 3	19.6 ± 1.5
...	COL	19.6	15 ± 2	24.6 ± 1.2
J08224744-5726530	β PMG	19.7	6 ± 1	17.3 ± 1.3
...	ABDMG	77.4	5 ± 1	29.2 ± 1.4
J08412528-5736021	COL	69.8 [b]	82 ± 5	21.0 ± 1.2
...	CAR	25.9 [b]	82 ± 4	22.2 ± 0.5
J08465879-7246588	β PMG	33.4	38 ± 3	14.6 ± 1.4
...	ABDMG	66.1	36 ± 3	27.1 ± 1.4
J09032434-6348330	COL	24.5	67 ± 3	19.4 ± 1.2
...	CAR	70.0	65 ± 2	20.8 ± 0.6
...	ARG	4.7 [b]	98 ± 4	8.5 ± 1.9
J09315840-6209258	β PMG	53.2	61 ± 7	14.8 ± 1.3
...	COL	19.4 [b]	78 ± 4	19.0 ± 1.2
...	CAR	19.6 [b]	77 ± 3	20.3 ± 0.6
J09353126-2802552	TWA	74.3	42 ± 5	17.4 ± 1.8
...	ABDMG	18.6 [b]	54 ± 4	22.7 ± 1.4
J11091606-7352465	β PMG	26.4	61 ± 6	11.6 ± 1.5
...	ARG	68.9 [b]	93 ± 4	2.3 ± 1.8
J11455177-5520456	β PMG	4.4	40 ± 3	9.4 ± 1.5
...	TWA	55.1	46 ± 4	12.0 ± 2.1
...	COL	29.5	45 ± 2	13.9 ± 1.2
J12103101-7507205	β PMG	18.4	57 ± 5	10.3 ± 1.5
...	ARG	77.4 [b]	75 ± 4	0.4 ± 1.8
...	ABDMG	2.9 [b]	64 ± 4	22.5 ± 1.4
J12242443-5339088	β PMG	87.9	23 ± 1	7.4 ± 1.5
...	COL	4.0	24 ± 1	11.7 ± 1.1
...	ABDMG	3.8	26 ± 1	18.1 ± 1.4
J13213722-4421518	TWA	57.1	60 ± 5	6.1 ± 2.8
J17165072-3007104	β PMG	70.2 [b]	102 ± 7	–10.4 ± 2.1
...	ARG	23.5 [b]	69 ± 7	–21.1 ± 1.3
J17243644-3152484	β PMG	53.5 [b]	107 ± 7	–9.9 ± 2.1
...	ARG	37.7 [b]	74 ± 7	–20.8 ± 1.3
J17261525-0311308	β PMG	24.6	23 ± 2	–17.9 ± 2.0
...	ABDMG	73.8 [b]	43 ± 2	–19.4 ± 1.5
J17275761-4016243	β PMG	35.1 [b]	80 ± 5	–7.0 ± 2.0
...	ARG	64.8 [b]	62 ± 5	–18.7 ± 1.4
J17300060-1840132	β PMG	12.8 [b]	80 ± 6	–14.0 ± 2.0
...	ARG	85.7	45 ± 7	–23.5 ± 1.3
J17580616-2222238	β PMG	12.6 [b]	78 ± 6	–13.0 ± 2.1
...	ARG	87.1	45 ± 6	–23.2 ± 1.3
J18141047-3247344	β PMG	61.3 [b]	76 ± 5	–9.6 ± 2.1
...	ARG	38.6 [b]	52 ± 6	–21.0 ± 1.3
J20072376-5147272	ARG	17.9	31 ± 1	–13.1 ± 1.2
J21334415-3453372	THA	74.1	52 ± 3	–8.3 ± 1.4
...	ABDMG	18.7 [b]	76 ± 3	2.3 ± 1.8
J21464282-8543046	β PMG	1.8	13 ± 1	10.3 ± 1.6
...	COL	21.4	17 ± 1	11.3 ± 1.1
...	ABDMG	76.6 [b]	16 ± 1	22.3 ± 1.6
J22294830-4858285	β PMG	71.7	36 ± 2	4.0 ± 1.7
...	ARG	22.0	41 ± 2	–6.5 ± 0.9
J22440873-5413183	β PMG	9.1	42 ± 3	5.8 ± 1.7
...	THA	83.5 [b]	48 ± 3	0.7 ± 1.4
...	ABDMG	6.8 [b]	62 ± 3	14.2 ± 1.9

TABLE 6 — *Continued*

Name	Group	P (%)	d_s (pc)	v_{rad}^{pred} (km s^{-1})
J22470872-6920447	THA	53.3	50 ± 3	5.4 ± 1.5
…	ABDMG	45.8	55 ± 3	19.1 ± 1.8
J23495365+2427493	β PMG	81.7	32 ± 2	-4.8 ± 1.4
…	COL	16.1 [b]	35 ± 1	-10.6 ± 1.1

[a] Membership probability without considering the RV or parallax information (P).
[b] Membership probability (P) for which the binary hypothesis has a higher probability.

TABLE 7
MEMBERSHIP PROBABILITIES OF ALL CANDIDATES[a]

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
J00171443-7032021	0.0	…	…	0.0	…	…	99.2[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.5	…	…	0.3	…	…
J00172353-6645124	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.4	0.0	…	0.1	0.0	…	0.0	0.0	…
J00233468+2014282	20.9	10.3	…	0.0	0.0	…	0.0	0.0	…	18.1[b]	35.0[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	61.1	54.7	…
J00281434-3227556	88.7[b]	…	…	0.0	…	…	10.3[b]	…	…	0.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…
J00340843+2523498	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	98.9	97.7	…	1.1	2.3	…
J00503319+2449009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9[b]	99.9[b]	0.0	0.0	0.0	0.0	0.3	0.1	99.9
J00551501+3015156	9.9	…	…	0.0	…	…	0.0	…	…	80.2[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	9.8	…	…
J01034210+4051158	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.7	95.6	96.7	34.3	4.4	3.3
J01071194-1935359	9.1[b]	85.2[b]	…	0.0	0.0	…	1.6	0.0	…	85.2[b]	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	4.1	14.8	…
J01112542+1526214	99.9[b]	99.9[b]	99.9[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01123504+1703557	2.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	96.9[b]	…	…	0.2	…	…
J01132817-3821024	22.2	…	…	0.0	…	…	58.6	…	…	19.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…
J01132958-0738088	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	97.0	…	…	3.0	…	…
J01220441-3337036	0.1	0.0	…	0.0	0.0	…	98.3	99.9	…	1.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.6	0.0	…	0.1	0.0	…
J01225093-2439505	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.1	…	…
J01351393-0712517	33.2[b]	99.9[b]	99.9[b]	0.0	0.0	0.0	6.0[b]	0.0	0.0	60.8[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01365516-0647379	27.4	99.9	99.9	0.0	0.0	0.0	1.5	0.0	0.0	70.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1
J01372322+2657119	1.4	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	98.1	99.9	…	0.5	0.1	…
J01484087-4830519	0.0	…	…	0.0	…	…	77.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	23.0	…	…	0.0	…	…
J01521830-5950168	0.0	0.0	…	0.0	0.0	…	95.3	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	4.6[b]	0.0	…	0.0	0.0	…
J01535076-1459503	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…
J02001277-0840516	13.4	…	…	0.0	…	…	12.4	…	…	74.2	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…
J02045317-5346162	0.0	…	…	0.0	…	…	94.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	5.1[b]	…	…	0.0	…	…
J02070176-4406380	0.1	…	…	0.0	…	…	98.9[b]	…	…	0.3	…	…	0.0	…	…	0.0	…	…	0.7	…	…	0.0	…	…
J02155892-0929121	35.4	…	…	0.0	…	…	23.5[b]	…	…	41.1[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…
J02224418-6022476	0.1	…	…	0.0	…	…	67.4[b]	…	…	0.1	…	…	3.6[b]	…	…	0.0	…	…	28.9[b]	…	…	0.0	…	…
J02303239-4342232	0.5	1.6	…	0.0	0.0	…	61.1	0.1	…	38.3	98.3	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J02365171-5203036	9.2	17.6	…	0.0	0.0	…	62.4[b]	1.3	…	28.3[b]	81.1[b]	…	0.0	0.0	…	0.0	0.0	…	0.2	0.0	…	0.0	0.0	…
J02414683-5259523	0.0	0.0	…	0.0	0.0	…	96.5[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	3.5[b]	0.0	…	0.0	0.0	…
J02414730-5259306	0.3	0.0	…	0.0	0.0	…	94.7[b]	99.9[b]	…	4.2[b]	0.0	…	0.0	0.0	…	0.0	0.0	…	0.8	0.0	…	0.0	0.0	…
J02423301-5739367	0.0	0.0	…	0.0	0.0	…	90.8	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	9.2	0.0	…	0.0	0.0	…
J02442137+1057411	26.1[b]	…	0.0	0.0	…	0.0	9.7[b]	…	0.0	56.1[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	8.1	…	0.0
J02523096-1548357	0.2	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…
J02545247-0709255	2.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	95.2[b]	…	…	1.9	…	…
J02564708-6343027	0.1	…	…	0.0	…	…	82.9[b]	…	…	1.4	…	…	0.0	…	…	0.0	…	…	15.6[b]	…	…	0.0	…	…
J03033668-2535329	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9	16.6	0.0	0.0	0.0	0.0	0.4	83.4	99.9
J03050976-3725058	1.2	…	…	0.0	…	…	0.5	…	…	98.1[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…
J03190864-3507002	0.1	0.0	…	0.0	0.0	…	84.4	99.9	…	15.4	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J03214689-0640242	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9	0.0	…	0.0	0.0	…	0.5	99.9	…
J03241504-5901125	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	61.6	99.4	…	0.0	0.0	…	0.0	0.0	…	34.4	0.0	…	4.0	0.6	…
J03282609-0537361	0.1	…	…	0.0	…	…	0.1	…	…	0.0	…	…	0.0	…	…	98.4[b]	…	…	0.0	…	…	1.4	…	…
J03315564-4359135	0.0	0.0	…	0.0	0.0	…	96.3	99.9	…	3.7	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J03320347-5139550	0.7	…	…	0.0	…	…	0.0	…	…	94.7	…	…	0.0	…	…	0.0	…	…	0.3	…	…	4.3	…	…
J03415581-5542287	0.6	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.9	…	…	0.0	…	…	0.5	…	…
J03454058-7509121	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J03494535-6730350	0.0	0.0	…	0.0	0.0	…	2.1	7.4	…	12.9	87.7	…	0.0	0.0	…	0.0	0.0	…	80.0	0.0	…	4.9	4.9	…

TABLE 7 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
J04071148-2918342	0.4	…	…	0.0	…	…	0.1	…	…	99.4	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J04082685-7844471	0.0	…	…	0.0	…	…	26.5	…	…	0.4	…	…	71.0	…	…	0.0	…	…	1.8	…	…	0.3	…	…
J04084031-2705473	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.4	…	…
J04091413-4008019	0.2	…	…	0.0	…	…	0.6	…	…	99.1	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J04093930-2648489	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.1	…	…	1.9	…	…
J04132663-0139211	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9	0.0	…	0.0	0.0	…	0.1	99.9	…
J04141730-0906544	0.6	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.2	…	…	0.3	…	…
J04213904-7233562	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…
J04240094-5512223	1.0	0.8	…	0.0	0.0	…	4.9[b]	0.3	…	55.4[b]	99.0[b]	…	0.0	0.0	…	0.0	0.0	…	38.6[b]	0.0	…	0.1	0.0	…
J04244260-0647313	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.4	…	…	0.0	…	…	0.6	…	…
J04313859-3042509	2.7	…	…	0.0	…	…	0.1	…	…	97.3[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J04353618-2527347	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…
J04363294-7851021	7.4	…	…	0.0	…	…	0.8	…	…	7.2[b]	…	…	0.0	…	…	0.0	…	…	84.0[b]	…	…	0.6	…	…
J04365738-1613065	3.0	…	…	0.0	…	…	48.6[b]	…	…	48.3[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J04424932-1452268	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.3	…	…
J04440099-6624036	0.0	…	…	0.0	…	…	97.5	…	…	0.0	…	…	0.1	…	…	0.0	…	…	2.0	…	…	0.4	…	…
J04464970-6034109	6.8	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	92.3	…	…	0.8	…	…	0.1	…	…
J04480066-5041255	0.0	0.0	…	0.0	0.0	…	95.9	99.9	…	0.5	0.1	…	0.0	0.0	…	0.0	0.0	…	3.5	0.0	…	0.0	0.0	…
J04514615-2400087	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.9	…	…	1.1	…	…
J04515303-4647309	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J04522441-1649219	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9[b]	99.9[b]	99.9[b]	0.1	0.0	0.0
J04554034-1917553	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.3	…	…	1.7	…	…
J04571728-0621564	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	96.2	99.9	…	3.8	0.3	…
J04595855-0333123	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	90.8	…	…	0.0	…	…	9.2	…	…
J05015881+0958587	99.9[b]	99.9[b]	99.9[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J05064946-2135038	99.9[b]	99.9[b]	99.9[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J05064991-2135091	14.6	4.4	99.9	0.0	0.0	0.0	0.6	0.0	0.0	84.8[b]	95.6[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J05082729-2101444	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05090356-4209199	27.3	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	72.5[b]	…	…	0.0	…	…	0.2	…	…
J05100427-2340407	0.2	…	…	0.0	…	…	5.3[b]	…	…	94.5	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05100488-2340148	0.1	…	…	0.0	…	…	1.1	…	…	98.8	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05111098-4903597	0.0	…	…	0.0	…	…	0.7	…	…	98.4	…	…	0.0	…	…	0.0	…	…	0.9	…	…	0.0	…	…
J05130132-7027418	1.2	…	…	0.0	…	…	0.0	…	…	6.5	…	…	0.0	…	…	0.2	…	…	91.6	…	…	0.5	…	…
J05142736-1514514	0.1	…	…	0.0	…	…	12.8	…	…	86.6	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.5	…	…
J05142878-1514546	0.7	…	…	0.0	…	…	11.9[b]	…	…	87.1	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…
J05164586-5410168	0.1	1.8	…	0.0	0.0	…	0.1	65.9	…	92.1	0.0	…	0.0	0.0	…	0.0	0.0	…	7.7	0.0	…	0.0	32.2	…
J05195412-0723359	0.0	…	…	0.0	…	…	9.1	…	…	90.3	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.5	…	…
J05195582-1124568	24.0	…	…	0.0	…	…	0.1	…	…	75.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05195695-1124440	1.1	…	…	0.0	…	…	0.3	…	…	98.4[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…
J05224571-3917062	99.9	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.2	…	0.1	99.9	…
J05241317-2104427	1.4	…	…	0.0	…	…	0.3	…	…	98.2[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05241914-1601153	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J05254166-0909123	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9[b]	99.9[b]	99.9[b]	0.0	0.1	0.0
J05301858-5358483	78.4	…	…	0.0	…	…	0.0	…	…	12.0	…	…	0.0	…	…	0.3	…	…	6.8	…	…	2.5	…	…
J05320450-0305291	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05332558-5117131	0.0	0.0	…	0.0	0.0	…	98.5	99.9	…	0.3	0.0	…	0.0	0.0	…	0.0	0.0	…	0.5	0.0	…	0.6	0.1	…
J05332802-4257205	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.0	…	…

TABLE 7 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
J05335981-0221325	99.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05381615-6923321	0.0	…	…	0.0	…	…	0.6	…	…	19.9	…	…	0.1	…	…	0.0	…	…	73.9	…	…	5.5	…	…
J05392505-4245211	0.0	…	…	0.0	…	…	31.4	…	…	68.3	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.1	…	…
J05395494-1307598	0.6	…	…	0.0	…	…	0.3	…	…	99.0[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05422387-2758031	99.3	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.7	…	…
J05425587-0718382	1.5	…	…	0.0	…	…	0.0	…	…	98.2[b]	…	…	0.0	…	…	0.2	…	…	0.0	…	…	0.2	…	…
J05432676-3025129	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.3	…	…
J05470650-3210413	0.6	…	…	0.0	…	…	0.0	…	…	99.3[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J05471788-2856130	86.8	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	10.0[b]	…	…	0.0	…	…	3.2	…	…
J05531299-4505119	0.0	0.0	…	0.0	0.0	…	0.1	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	98.7	99.9	…	1.2	0.1	…
J06002304-4401217	0.0	…	…	0.0	…	…	1.6	…	…	97.7	…	…	0.0	…	…	0.0	…	…	0.5	…	…	0.2	…	…
J06012186-1937547	0.4	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…
J06022455-1634494	0.3	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	97.7	…	…	2.0	…	…
J06091922-3549311	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9[b]	99.9[b]	99.9[b]	0.0	0.0	0.0
J06112997-7213388	0.0	…	…	0.0	…	…	6.0[b]	…	…	1.4	…	…	90.4[b]	…	…	0.0	…	…	2.1[b]	…	…	0.0	…	…
J06131330-2742054	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0
J06134539-2352077	0.1	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…
J06135773-2723550	97.3	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	2.6	99.9	…
J06153953-8433115	75.7	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	22.8[b]	…	…	1.4	…	…
J06161032-1320422	97.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	2.0	…	…
J06234024-7504327	0.0	…	…	0.0	…	…	4.9[b]	…	…	1.5	…	…	90.4[b]	…	…	0.0	…	…	2.4[b]	…	…	0.8	…	…
J06373215-2823125	0.2	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.0	…	…	0.8	…	…
J06380031-4056011	0.2	…	…	0.0	…	…	0.0	…	…	1.6	…	…	0.0	…	…	93.9	…	…	0.0	…	…	4.3	…	…
J06434532-6424396	0.4	…	…	0.0	…	…	0.0	…	…	38.2[b]	…	…	54.0[b]	…	…	0.0	…	…	7.4[b]	…	…	0.0	…	…
J06475229-2523304	0.2	0.0	…	0.0	0.0	…	0.0	0.0	…	75.2	0.0	…	0.0	0.0	…	0.0	0.0	…	21.5[b]	0.0	…	3.0	99.9	…
J06511418-4037510	0.1	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9[b]	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	99.9	…
J07065772-5353463	0.2	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.0	…	…	0.2	…	…	0.0	…	…
J07115917-3510157	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.4	…	…
J07140101-1945332	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.3	…	…
J07170438-6311123	2.1	…	…	0.0	…	…	0.0	…	…	75.8	…	…	1.1	…	…	0.6	…	…	20.0	…	…	0.4	…	…
J07310129+4600266	0.1	…	…	0.0	…	…	0.0	…	…	81.6[b]	…	…	0.0	…	…	0.0	…	…	11.4[b]	…	…	6.8	…	…
J07343426-2401353	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	94.2[b]	…	…	0.0	…	…	5.8	…	…
J07504838-2931126	75.9	…	…	0.0	…	…	0.0	…	…	19.6	…	…	0.0	…	…	0.0	…	…	0.0	…	…	4.5	…	…
J07540718-6320149	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J08031018+2022154	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9[b]	0.0	…	0.0	0.0	…	0.2	99.9	…
J08173943-8243298	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.2	…	…	0.0	…	…
J08185942-7239561	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J08224744-5726530	19.7	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	77.4	…	…	2.9	…	…
J08412528-5736021	0.2	…	…	0.0	…	…	0.0	…	…	69.8[b]	…	…	25.9[b]	…	…	0.0	…	…	0.0	…	…	4.1	…	…
J08422284-8345248	0.0	…	…	0.0	…	…	0.0	…	…	1.5	…	…	90.4	…	…	0.1	…	…	2.1	…	…	5.9	…	…
J08465879-7246588	33.4	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.2	0.0	…	66.1	0.0	…	0.3	99.9	…
J08475676-7854532	93.8[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	2.7[b]	…	…	3.6	…	…
J09032434-6348330	0.1	…	…	0.0	…	…	0.0	…	…	24.5	…	…	70.0	…	…	4.7[b]	…	…	0.0	…	…	0.7	…	…
J09315840-6209258	53.2	…	…	0.0	…	…	0.0	…	…	19.4[b]	…	…	19.6[b]	…	…	0.0	…	…	0.6	…	…	7.3	…	…
J09331427-4848331	0.1	0.0	…	0.1	0.0	…	0.0	0.0	…	13.2	94.3	…	0.0	0.0	…	81.7[b]	0.0	…	0.0	0.0	…	5.0	5.7	…
J09353126-2802552	0.0	0.0	…	74.3	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	18.6[b]	0.0	…	7.1	99.9	…

TABLE 7 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
J09361593+3731456	0.5	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	99.4	99.9	99.1
J09423823-6229028	0.5	…	…	0.0	…	…	0.0	…	…	2.2	…	…	0.0	…	…	97.2	…	…	0.0	…	…	0.0	…	…
J09445422-1220544	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…
J10121768-0344441	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.0[b]	91.4[b]	0.0	12.9	8.4	99.9
J10140807-7636327	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J10182870-3150029	0.0	0.0	…	99.9	98.0	…	0.0	0.0	…	0.0	0.1	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.2	1.9	…
J10252092-4241539	0.0	…	…	97.4	…	…	0.0	…	…	1.3	…	…	0.0	…	…	0.0	…	…	0.0	…	…	1.3	…	…
J10252563-4918389	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.1	…	…
J10423011-3340162	2.5[b]	11.2[b]	…	96.9[b]	88.7[b]	…	0.0	0.0	…	0.6	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11091606-7352465	26.4	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.0	…	…	68.9[b]	…	…	0.5	…	…	4.0	…	…
J11102788-3731520	0.0	0.0	…	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11132622-4523427	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.1	0.0	…
J11200609-1029468	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.1	…	…
J11210549-3845163	0.0	0.0	…	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11211723-3446454	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11211745-3446497	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11254754-4410267	0.3	0.0	…	44.2	0.1	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	54.4[b]	99.9[b]	…	1.1	0.1	…
J11315526-3436272	0.0	0.0	…	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11321831-3019518	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J11455177-5520456	4.4	0.0	…	55.1	45.7	…	0.0	0.0	…	29.5	47.7	…	0.0	0.0	…	0.1	0.0	…	0.0	0.0	…	10.8	6.6	…
J11493184-7851011	78.3	91.4	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	21.7	8.6	…
J12072738-3247002	0.0	0.0	…	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J12092998-7505400	0.7	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.1[b]	…	…	0.0	…	…	0.1	…	…
J12103101-7507205	18.4	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	77.4[b]	…	…	2.9[b]	…	…	1.3	…	…
J12151838-0237283	0.0	0.0	…	0.5	0.5	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	48.4[b]	82.9[b]	…	51.1	16.7	…
J12153072-3948426	0.0	0.0	…	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J12194808+5246450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.0	0.0	0.0	5.0	99.9	99.9
J12210499-7116493	46.0	83.8	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.2	0.0	…	53.8	16.2	…
J12233860-4606203	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.2	…	…
J12242443-5339088	87.9	…	…	0.0	…	…	0.0	…	…	4.0	…	…	0.0	…	…	0.0	…	…	3.8	…	…	4.3	…	…
J12313807-4558593	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J12342047-4815195	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9	99.9	…
J12342064-4815135	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9	99.9	…
J12350424-4136385	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J12383713-2703348	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.3	…	…	0.7	…	…
J12574030+3513306	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	99.9[b]	67.0[b]	99.9[b]	0.4	20.2	0.1
J13213722-4421518	0.0	0.0	…	57.1	89.2	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	42.9	10.8	…
J13283294-3654233	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.2	…	…	0.0	…	…	0.8	…	…
J13382562-2516466	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.0	…	…	0.2	…	…
J13412668-4341522	1.6	…	…	96.3	…	…	0.0	…	…	0.4	…	…	0.0	…	…	0.1	…	…	0.0	…	…	1.6	…	…
J13493313-6818291	2.6	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	96.4[b]	…	…	0.0	…	…	1.0	…	…
J13545390-7121476	8.5	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	91.0	…	…	0.5	…	…
J13591045-1950034	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.6	15.0	0.1	0.0	0.0	0.0	4.4	85.0	99.9
J14142141-1521215	99.9	99.4	96.9	0.0	0.1	1.1	0.0	0.0	0.0	0.0	0.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
J14190331+6451463	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.0	…	…	0.0	…	…	98.3[b]	…	…	1.5	…	…
J14284804-7430205	1.8	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…	97.0[b]	…	…	0.0	…	…	0.9	…	…
J14563812-6623419	0.1	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	95.3[b]	…	…	0.0	…	…	4.7	…	…

TABLE 7 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
J15163224-5855237	0.5	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.5	…	…	0.0	…	…	1.0	…	…
J15244849-4929473	4.5	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	95.1[b]	99.9[b]	…	0.4	0.0	…
J15553178+3512028	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9	99.9	…	0.0	0.0	…	0.2	0.1	…
J15594729+4403595	0.1	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	92.8[b]	…	…	7.0	…	…
J16074132-1103073	0.5	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.4[b]	…	…	1.1	…	…
J16232165+6149149	0.7	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	93.9	…	…	5.5	…	…
J16430128-1754274	7.5	35.3	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	9.2	0.0	…	0.0	0.0	…	83.2	64.7	…
J16572029-5343316	99.5	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.4	…	…	0.1	…	…	0.0	…	…
J17080882-6936186	0.0	…	…	0.0	…	…	93.2[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	6.8	…	…
J17115853-2530585	0.2	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	92.1	…	…	0.0	…	…	7.7	…	…
J17130733-8552105	0.0	…	…	0.0	…	…	98.5[b]	…	…	0.0	…	…	0.4	…	…	0.0	…	…	0.0	…	…	1.0	…	…
J17150219-3333398	96.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	1.3	…	…	1.9	…	…
J17165072-3007104	70.2[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	23.5[b]	…	…	0.0	…	…	6.3	…	…
J17243644-3152484	53.5[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	37.7[b]	…	…	0.0	…	…	8.8	…	…
J17261525-0311308	24.6	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	73.8[b]	…	…	1.6	…	…
J17275761-4016243	35.1[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	64.8[b]	…	…	0.0	…	…	0.1	…	…
J17292067-5014529	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.4	0.0	…	0.0	0.0	…	0.0	0.0	…
J17300060-1840132	12.8[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	85.7	…	…	0.0	…	…	1.5	…	…
J17520294+5636278	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.9	…	…	0.3	…	…
J17580616-2222238	12.6[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	87.1	…	…	0.0	…	…	0.3	…	…
J18083702-0426259	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0
J18141047-3247344	61.3[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	38.6[b]	…	…	0.0	…	…	0.1	…	…
J18142207-3246100	87.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	11.8	0.0	…	0.0	0.0	…	0.3	0.2	…
J18151564-4927472	91.2[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	8.8[b]	…	…	0.0	…	…	0.0	…	…
J18202275-1011131	0.4	94.5[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.5	0.0	…	0.0	0.0	…	0.1	5.5	…
J18420694-5554254	76.2	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	23.8[b]	0.0	…	0.0	0.0	…	0.0	0.0	…
J18450097-1409053	4.5[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	95.5[b]	…	…	0.0	…	…	0.0	…	…
J18465255-6210366	58.2	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	41.8[b]	0.0	…	0.0	0.0	…	0.0	0.0	…
J18495543-0134087	97.9	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.1	…	…	0.0	…	…	2.0	…	…
J18504448-3147472	92.5	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	7.5	0.0	…	0.0	0.0	…	0.0	0.0	…
J18553176-1622495	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.5	…	…	1.5	…	…
J18580415-2953045	98.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	1.0	0.0	…	0.0	0.0	…	0.1	0.2	…
J19102820-2319486	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.2	…	…	0.0	…	…	0.0	…	…
J19224278-0515536	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	99.3[b]	…	…	0.0	…	…	0.7	…	…
J19225071-6310581	0.0	…	…	0.0	…	…	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J19233820-4606316	98.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.5	0.0	…	0.0	0.0	…	0.6	0.2	…
J19243494-3442392	99.9[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…
J19312434-2134226	98.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	64.1	85.9	0.0	0.0	0.0	0.1	35.9	14.1
J19420065-2104051	0.1	…	…	0.0	…	…	0.0	…	…	2.2	…	…	0.0	…	…	0.0	…	…	97.4[b]	…	…	0.3	…	…
J19432464-3722108	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	98.8	…	…	0.0	…	…	1.2	…	…
J19435432-0546363	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	0.0	…	…	90.5	…	…	0.0	…	…	9.5	…	…
J19560294-3207186	98.8[b]	99.5[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	1.2	0.5	…
J19560438-3207376	99.9[b]	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…
J20013718-3313139	98.9	99.9	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	1.1	0.1	…
J20072376-5147272	2.6	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	17.9	89.5	…	39.0	0.0	…	40.5	10.5	…
J20100002-2801410	99.9[b]	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0

TABLE 7 — *Continued*

Name	βPMG P	βPMG P_v	βPMG $P_{v+\pi}$	TWA P	TWA P_v	TWA $P_{v+\pi}$	THA P	THA P_v	THA $P_{v+\pi}$	COL P	COL P_v	COL $P_{v+\pi}$	CAR P	CAR P_v	CAR $P_{v+\pi}$	ARG P	ARG P_v	ARG $P_{v+\pi}$	ABDMG P	ABDMG P_v	ABDMG $P_{v+\pi}$	Field P	Field P_v	Field $P_{v+\pi}$
J20163382-0711456	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	95.8	...	...	0.0	...	...	4.2	...	...
J20220177-3653014	0.4	...	...	0.0	...	...	0.0	...	...	0.1	...	...	0.0	...	...	0.0	...	...	99.4	...	...	0.1	...	...
J20223306-2927499	0.5	...	...	0.0	...	...	0.3	...	...	0.0	...	...	0.0	...	...	0.0	...	...	95.6[b]	...	...	3.5	...	...
J20333759-2556521	99.9[b]	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.2	...	0.0
J20431469-2925217	96.9	...	...	0.0	...	...	0.6	...	...	0.0	...	...	0.0	...	...	0.0	...	...	1.0	...	...	1.5	...	...
J20434114-2433534	99.9[b]	99.9[b]	99.9[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J20465795-0259320	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	99.2	99.9	...	0.8	0.1	...
J20515256-3046329	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	92.9	...	...	0.0	...	...	7.1	...	...
J20531465-0221218	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.2	0.0	0.0	0.0	0.0	0.0	9.8	99.9	99.9
J20560274-1710538	99.9[b]	99.9[b]	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...
J21073678-1304581	91.4	...	...	0.0	...	...	0.0	...	...	0.2	...	...	0.1	...	...	0.0	...	...	8.0[b]	...	...	0.4	...	...
J21100535-1919573	99.9[b]	99.9[b]	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...
J21103096-2710513	99.9[b]	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.1	...	...
J21103147-2710578	99.9[b]	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...
J21130526-1729126	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	99.9	99.9	...	0.3	0.0	...
J21212873-6655063	57.6	99.9	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.3	0.0	0.0	12.8[b]	0.0	0.0	0.3	0.1	0.1
J21334415-3453372	0.0	...	...	0.0	...	...	74.1	...	...	0.0	...	...	0.0	...	...	0.0	...	...	18.7[b]	...	...	7.2	...	...
J21342935-1840372	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	93.7[b]	...	...	0.0	...	...	6.3	...	...
J21464282-8543046	1.8	...	...	0.0	...	...	0.0	...	...	21.4	...	...	0.0	...	...	0.0	...	...	76.6[b]	...	...	0.2	...	...
J21471964-4803166	0.4	...	...	0.0	...	...	96.7[b]	...	...	0.0	...	...	0.0	...	...	0.0	...	...	2.8[b]	...	...	0.1	...	...
J21490499-6413039	0.0	...	...	0.0	...	...	99.9[b]	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...
J21521039+0537356	8.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.1[b]	99.9[b]	99.9[b]	0.9	0.1	0.0
J21551741-0045478	95.9	...	...	0.0	...	...	0.0	...	...	0.8	...	...	0.0	...	...	0.0	...	...	0.0	...	...	3.3	...	...
J22004158+2715135	81.5	98.0	...	0.0	0.0	...	0.0	0.0	...	3.4	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	15.1	2.0	...
J22021626-4210329	0.0	0.0	...	0.0	0.0	...	98.4	99.9	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	1.5	0.0	...	0.1	0.1	...
J22174316-1546452	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	98.4	...	...	0.0	...	...	1.6	...	...
J22274882-0113527	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	99.9[b]	...	...	0.0	...	...	0.5	...	...
J22294830-4858285	71.7	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	22.0	...	...	0.0	...	...	6.3	...	...
J22332264-0936537	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	99.9[b]	2.3[b]	...	0.0	0.0	...	0.4	97.7	...
J22371494-2622332	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	99.2[b]	...	...	0.0	...	...	0.8	...	...
J22424884+1330532	46.0	0.0	...	0.0	0.0	...	0.0	0.0	...	6.0	60.3	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	48.0	39.7	...
J22424896-7142211	94.8	99.9	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	3.5[b]	0.0	...	1.6	0.0	...	0.1	0.0	...
J22440873-5413183	9.1	0.0	...	0.0	0.0	...	83.5[b]	0.0	...	0.3	0.0	...	0.0	0.0	...	0.0	0.0	...	6.8[b]	0.0	...	0.4	99.9	...
J22470872-6920447	0.0	0.0	...	0.0	0.0	...	53.3	0.3	...	0.2	0.0	...	0.0	0.0	...	0.0	0.0	...	45.8	0.0	...	0.6	99.9	...
J23172807+1936469	94.4	96.1	...	0.0	0.0	...	0.0	0.0	...	0.3	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	5.3	3.9	...
J23204705-6723209	0.0	...	...	0.0	...	...	99.9	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.2	...	...
J23205766-0147373	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.8[b]	96.2[b]	99.9[b]	0.0	0.0	0.0	7.2	3.8	0.2
J23261069-7323498	0.0	0.0	...	0.0	0.0	...	99.9	99.9	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...
J23285763-6802338	0.0	...	...	0.0	...	...	99.9	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...
J23301341-2023271	99.9[b]	11.2[b]	0.7	0.0	0.0	0.0	0.0	1.5	0.1	0.1	75.7[b]	99.2[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	0.0
J23314492-0244395	95.0[b]	...	...	0.0	...	...	0.7	...	...	4.2[b]	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.1	...	...
J23320018-3917368	0.0	0.0	...	0.0	0.0	...	0.1	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	99.9	99.9	...	0.1	0.0	...
J23323085-1215513	95.9	99.9	...	0.0	0.0	...	0.3	0.0	...	3.7	0.0	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.1	0.0	...
J23331860+2714219	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	99.3	...	...	0.0	...	...	0.7	...	...
J23332198-1240072	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	98.6	...	...	0.0	...	...	1.4	...	...
J23452225-7126505	0.0	...	...	0.0	...	...	99.9[b]	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...	0.0	...	...
J23474694-6517249	0.0	0.0	...	0.0	0.0	...	99.9	99.9	...	0.0	0.0	...	0.0	0.0	...	0.0	0.0	...	0.1	0.0	...	0.0	0.0	...

TABLE 7 — *Continued*

Name	βPMG			TWA			THA			COL			CAR			ARG			ABDMG			Field		
	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$	P	P_v	$P_{v+\pi}$
J23495365+2427493	81.7	…	…	0.0	…	…	0.0	…	…	16.1[b]	…	…	0.0	…	…	0.0	…	…	0.0	…	…	2.2	…	…
J23500639+2659519	92.8[b]	61.6[b]	…	0.0	0.0	…	0.0	0.0	…	3.3[b]	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	3.9	38.4	…
J23512227+2344207	95.0	99.3	…	0.0	0.0	…	0.0	0.0	…	3.5[b]	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	1.5	0.7	…
J23513366+3127229	4.8	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	95.1[b]	99.9[b]	…	0.2	0.0	…
J23532520-7056410	1.8	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	92.2[b]	99.4[b]	…	0.0	0.0	…	6.0	0.6	…
J23555512-1321238	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	97.3	0.0	…	0.0	0.0	…	2.7	99.9	…
J23572056-1258487	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	0.0	0.0	…	99.9[b]	0.0	…	0.0	0.0	…	0.2	99.9	…
J23581366-1724338	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.2	0.0	0.0	0.0	0.0	0.0	0.8	99.9	99.9

[a] Membership probability (P), membership probability including radial velocity information (P_v), or membership probability including radial velocity and parallax informations ($P_{v+\pi}$).

[b] Membership probability (P or P_v or $P_{v+\pi}$) for which the binary hypothesis has a higher probability.

TABLE 8
CANDIDATE MEMBERS WITH PARALLAX MEASUREMENT

Name	d_s [c] (pc)	d_π [d] (pc)	P_v [a] (%)	$P_{v+\pi}$ [a] (%)	Group
J00503319+2449009	22.5 ± 1.3	11.8 ± 0.7 [f]	99.99 [b]	0.00	
J01034210+4051158	33.5 ± 1.6	29.9 ± 2.0	95.64	96.67	ABDMG
J01112542+1526214	20.5 ± 1.5	21.8 ± 0.8 [e]	99.99 [b]	99.99 [b]	β PMG
J01351393-0712517	35.5 ± 3.1	37.9 ± 2.4	99.99 [b]	99.99 [b]	β PMG
J01365516-0647379	21.1 ± 1.7	24.0 ± 0.4	99.99	99.99	β PMG
J04522441-1649219	16.0 ± 1.2	16.3 ± 0.4	99.99 [b]	99.99 [b]	ABDMG
J05015881+0958587	38.4 ± 3.9	24.9 ± 1.3 [e]	99.99 [b]	99.99 [b]	β PMG
J05064946-2135038	21.9 ± 4.4	19.2 ± 0.5 [e]	99.99 [b]	99.99 [b]	β PMG
J05064991-2135091	22.4 ± 0.7	19.2 ± 0.5 [e]	4.35	99.99	β PMG
J05254166-0909123	21.8 ± 1.5	20.7 ± 2.2	99.99 [b]	99.99 [b]	ABDMG
J06091922-3549311	22.5 ± 4.5	21.3 ± 1.4 [g]	99.99 [b]	99.99 [b]	ABDMG
J10121768-0344441	12.5 ± 0.0	7.9 ± 0.1 [f]	0.14	0.00	
J14142141-1521215	16.2 ± 1.2	30.2 ± 4.5 [f]	99.41	96.92	β PMG
J20434114-2433534	44.8 ± 3.2	28.1 ± 3.9	99.99 [b]	99.99 [b]	β PMG
J21212873-6655063	32.0 ± 2.0	30.2 ± 1.3 [f]	99.99	99.99	β PMG
J21521039+0537356	29.0 ± 1.7	30.5 ± 5.3 [f]	99.99 [b]	99.99 [b]	ABDMG
J23205766-0147373	29.6 ± 1.5	41.0 ± 2.7	96.16 [b]	99.99 [b]	ARG
J23301341-2023271	13.5 ± 0.6	16.2 ± 0.9 [f]	75.69 [b]	99.21 [b]	COL

[a] Membership probability including radial velocity information (P_v) or membership probability including radial velocity and parallax information ($P_{v+\pi}$).
[b] Membership probability (P_v or $P_{v+\pi}$) for which the binary hypothesis has a higher probability.
[c] Statistical distance including radial velocity information.
[d] Trigonometric distance from Shkolnik et al. (2012), unless stated otherwise.
[e] Trigonometric distance from Riedel (in prep).
[f] Trigonometric distance from van Leeuwen (2007).
[g] Trigonometric distance from Wahhaj et al. (2011).